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ABSTRACTS

FIBERS A

BEHAVIOR OF TEXTILE FIBERS TO RUBBING. PART 1. FRICTIONAL FORCES OCCURRING DURING SLIPPING OF FIBER TUFTS. PART 2. FRICTION BETWEEN POLYCAPROAMIDE FIBER TUFTS. PART 3. CHANGES IN THE FRICTIONAL FORCES BROUGHT ABOUT BY TEXTILE ASSISTANTS. W. Sbrolli and E. Rottenbacher. Riv. Tessile 35, No. 2: 145-147; No. 3: 247-252; No. 4: 371-380 (1959). In Italian. Through BCIRA 39: 2025 (1959). (2279)

Part 1. Frictional phenomena and forces occurring during slipping of fiber tufts are discussed, a recording measuring device for determining them is described, and the diagrams obtained are analyzed. The curves represent functions of the static and dynamic frictional forces and their variations in dependence of various factors. Part 2. The friction between polycaproamide fibers is studied as a function of mechanical characteristics (denier, crimp, weighting agent, etc.). Part 3. Changes in the friction brought about by suitable textile assistants and properties associated with friction are discussed. The behavior of smooth polycaproamide fibers treated with various agents is examined, with reference to the lubricating action of such agents and to the differentiation between softeners and lubricants.

Natural fibers A1

STUDY OF NATURAL AND SYNTHETIC FIBERS. PART 2. PROPERTIES OF COLLAGEN FIBERS. J. F. M. Oth. Kolloid Z. 162, No. 2: 124-134 (1959). In French. Through BCIRA 39: 1880 (1959). (2280)

The author studies the contraction of dry collagen and the length, mechanical properties, and swelling of collagen fibers in excess water, as a function of time, below and above the contraction temperature. The effect of tanning agents (e.g. formaldehyde) on the mechanical properties is also examined, and it is shown that the contraction phenomena are to some extent reversible.

LONG STAPLE COTTON: ITS SUPPLY AND DEMAND. C. H. Brown. Fibres 20: 187-189 (June 1959). (2281)

The main factors in the present British supply and demand position of long staple cotton, with particular emphasis on the near monopoly position held by Sudan cotton following the suspension of trade with Egypt, are discussed. A comparison between synthetic fibers and quality cotton is also made. Photos.

MOISTURE CONTENT OF COTTON AND FIBER PROPERTIES. N. H. Wood and A. F. Wolf. Z. ges. Textil-Ind. 61, No. 7: 244-248 (1959). In German. Through BCIRA 39: 1994 (1959). (2282)

This report is a reply to the joint enquiry of the Texas Cotton Association and the Texas Ginner Association. The items discussed are: moisture of cotton as expressed in terms of moisture regain or % moisture content, the effect of moisture content on fiber properties, and the Lower Rio Grande Valley test for determining the effect, on fiber properties, of water added to the cotton during the ginning process on the "lint-slide." The fiber properties, expressed as upper half mean length, mean length, uniformity ratio, and micronaire fineness, are tabulated, and the values from the center and both sides of a bale are compared.

COTTON IN THE SOVIET UNION. U. S. Foreign Agri. Serv. U.S. Dept. Agri., Washington 25, D. C. June 1959. 16 p. Available from Superintendent of Documents, Washington 25, D. C. 20¢. (2283)

Report of a U. S. Department of Agriculture technical study group which went to the Soviet Union in the fall of 1958. Contents: summary; production: Uzbekistan, Tadzhikistan, Azerbaydzhan; research; harvesting and quality evaluation; ginning, drying, and cleaning equipment; mill industry; statistical appendix.

COTTONS OF THE WORLD. A. Sattar. Pakistan Cottons 3: 6-40 (Jan. 1959). (2284)

Chapter 1. Introduction. Chapter 2. Fiber properties are tabulated for cottons of the U.S., Mexico, Paraguay, Peru, Brazil, Argentina, Pakistan, India, Turkey, Egypt, Sudan, Uganda, Belgian Congo, Syria, Iran, British West Indies, Puerto Rico, and Russia.

PHOTOCHEMICAL BEHAVIOR OF WOOL. D. Hildebrand. Z. ges. Textil-Ind. 61, No. 5: 180-182 (1959). In German. Through BCIRA 39: 2144 (1959). (2285)

Review of literature concerning changes in the mechanical and chemical properties of wool on exposure to light. 56 refs.

COTTON GRADE VERSUS QUALITY. J. L. Delany (Joanna Cotton Mills). Textile Bull. 85: 37-38 (May 1959). (2286)

Mill tests on the effects of ginning on cotton quality and manufacturing costs are summarized. Graphs.

HEAT INDUCED CHEMICAL CHANGES IN COTTON FIBER. L. E. Hessler and H. Workman (Texas Technological Coll.). Textile Research J. 29: 487-492 (June 1959). (2287)

Laboratory studies were made on cotton of known history, physical condition, and characteristics to determine how heat drying damages cotton fiber during ginning and mill processing. The data indicate that physical and chemical changes will to some extent depend on the physical nature of the fiber. Evidence from adsorption and swelling data suggest structural changes in the fiber which alter the ability of the fiber to take up moisture and to swell. Chemical reaction as measured by the degree of nitration also indicates structural changes due to excessive heat. Degree of polymerization decreases at the higher temperatures in oven heating and gin drying. A slight decrease in tensile strength was noted in drying at moderate temperatures, whereas a substantial drop occurred in drying at the higher temperatures. Graphs, 4 refs.

INFRARED STUDY OF OXIDIZED KERATIN. H. H. Stein and J. Guarnaccio (Toni Co.). Textile Research J. 29: 492-496 (June 1959). (2288)

The infrared spectra of oxidized human hair, callus, and wool were examined. An absorption band at 9.6 μ was observed in the spectra of all the oxidized species, whereas the untreated keratin did not absorb at that wavelength. The nature of the group responsible for the band is not clear, but it was established that infrared absorption by keratin at 9.6 μ is a specific test for a prior oxidative treatment. Graphs, tables, 10 refs.

APPAREL EXPENDITURES AND THE DEMAND FOR COTTON. J. R. Donald. Cotton Situation No. 180: 19-24 (Jan. 1959). (2289)

The apparel industry has significantly increased its consumption of cotton during the past decade. By 1957, one-half of all cotton consumed by mills was ultimately manufactured into items of apparel. Industrial uses of cotton declined, 14% from the 1947 level, primarily because of losses in the automobile market. Household uses increased slightly.

USE OF HAIR AND SPECIALTY FIBERS IN TEXTILES. F. Monkman (F. Monkman Ltd). Textile J. Australia 34: 142, 145-146 (Apr. 20, 1959). (2290)

The properties and textile applications of cashmere, animal hair, alpaca, vicuna, guanaco, llama, mohair, angora, muskrat, seal, beaver, nutria, mink, racoon, reindeer, wool kemp, and down are summarized.

Manmade fibers A2

PRODUCTION AND PROPERTIES OF ACRYLIC FIBERS. E. Bobek. Textil-Praxis 14, No. 3: 251-254; No. 4: 364-367 (1959). In German. Through BCIRA 39: 2014 (1959). (2291)

A survey is made and examples are given of the production, properties, and uses of acrylic fibers. For certain finishing processes, only general directions are given since, apart from the theoretical knowledge, practical experience is necessary as regards machines, temperatures, velocities and other factors, if a certain effect is to be obtained.

ORLON TYPE 25 ACRYLIC FIBER. E. I. du Pont de Nemours & Co., Technical Services Section, Wilmington, Del. May 1959. 2 p. Bull. NP-7. Free. (2292)

Processing and properties of Orlon type 25.

RAYON AND SYNTHETIC FIBERS OF JAPAN, 1959. Japan Chem. Fibres Assoc., No. 3, 3-chome, Nihonbashi-Muromachi, Chuo-Ru, Tokyo, Japan. 1959. 52 p. Free. (2293)

This annual contains articles on Japanese manmade fibers (with fabric swatches), a table of the chemical properties of these fibers, articles on Japanese textile design, and a directory of manufacturers.

RELATION BETWEEN BIREFRINGENCE AND DRAW RATIO OF MANMADE FIBERS. H. de Vries. J. Polymer Sci. 34: 761-778 (Jan. 1959). Through BCIRA 39: 1889 (1959). (2294)

In the course of investigations into the relationship between draw ratio and birefringence of manmade fibers, it was found that the relation published by Kordes et al for Perlon (nylon 6) has equivalents for several different fibers that may be considered as special cases of one general empirical relation.

WORLD MANMADE FIBER SURVEY. Textile Organon 30: 85-104 (June 1959). (2295)

Annual survey of the world manmade fiber producing industry includes production statistics and a directory of producers' names.

RILSAN. G. Pozza. Riv. Tessile 13, No. 12: 1291-1299 (1958). In Italian. Through BCIRA 39: 2011 (1959). (2296)

A detailed description is given of the general and mechanical properties of Rilsan fiber yarn, and particular reference is made to the problem of dyeing Rilsan yarn alone and in blends with wool. Some directions are also given for printing of Rilsan, and the use of suitable thickeners.

YARN PRODUCTION B

REVIEW OF ABRIDGED SPINNING PROCESSES. G. Schlese. Z. ges. Textil-Ind. 61, No. 7: 249-254 (1959). In German. Through BCIRA 39: 2034 (1959). (2297)

Methods for continuous yarn production are reviewed, with special reference to abridged classical spinning methods (reduction of number of passages) and to new processes such as the Keeler and Strang method based on the utilization, for sliver formation, of laminar flow of liquids, the Götzfried suction spinning system, and the Meimberg comb spinning process.

PREPARING AND SPINNING WOOL BLENDS. N. Roper. Textile Mfr. 85: 223-224 (May 1959). (2298)

Problems arising in the processing of wool/staple fiber blends on conventional machinery and methods for overcoming them are discussed.

BEHAVIOR OF OLEINS AND MINERAL OILS MIXED WITH EMULSIFIERS IN THE MACKEY APPARATUS. M. Kehren and H. Goldstein. Z. ges. Textil-Ind. 61, No. 5: 176-179 (1959). In German. Through BCIRA 39: 2024 (1959). (2299)

With a view to ascertaining the causes of spinning oil oxidizability, the authors review in this paper the structure and solubility of surface active agents, their emulsifying properties and the stability of the emulsions, and the chemical constitution of emulsifiers.

PRELIMINARY DRAFTING IN SPINNING. A. Valota. Industrie Textile: 93-99 (Feb. 1959). In French. Through BCIRA 39: 2032 (1959). (2300)

Preliminary drafting and the phenomena accompanying it are studied, with special reference to the nature and magnitude of the forces involved: the retarding force, i.e. the friction preventing the fibers from slipping on each other when subjected to tension; the drafting force, i.e. the force necessary to overcome the friction and cause continuous movement of the fibers. Diagrams are given and interpreted.

CREPING, CURLING, OR CRIMPING OF YARNS. J. Villet. Industrie Textile: 91-93 (Feb. 1959). In French. Through BCIRA 39: 2046 (1959). (2301)

A method is described in which the overtwisted thread (e.g. nylon) is wound under high tension on to removable supports (sleeves consisting of a stainless steel perforated-foil cylinder with a diameter of 120 mm), whereupon the supports are withdrawn and the yarn subjected to high temperature dyeing. Subsequent stages comprise the following operations: unwinding of the thread and winding it on to bobbins; untwisting; joining two untwisted threads (one with S- and the other with Z-twist); slight twisting of the combined threads; and winding the yarn on to supports (generally cones) for further use.

Opening, picking, fiber preparation B1

POTENTIAL SAVINGS FOR COTTON MILL IN BLENDING. J. T. White (James Hunter, Inc.). Am. Textile Reptr. 73: 19, 23, 65 (May 21, 1959). (2302)

The potential savings possible by the use of volumetric hoppers for preblending carload lots and the replacement of the conventional volumetric hoppers with a series of weighing type feeders that build an exact sandwich on a horizontal conveyor ahead of a mechanical mixer are pointed out. Photos.

Carding and combing B2

SOME INVESTIGATIONS ON THE COMBING OF COTTON. W. F. DuBois. Tex 18, No. 3: 269-279 (1959). In Dutch. Through BCIRA 39: 2031 (1959). (2303)

Results of some experiments with 3 cottons (Menufi, Karnak, and Zagora), processed on a Platt comber with sliver lap and ribbon lap preparation, are reported. The fiber distribution in the carded and combed slivers was examined by using the Johannsen-Zweigle apparatus, and the weight percentages of fibers in the various length groups were calculated.

CARDROOM CALCULATIONS. N. H. Pomfret. Textile World 109: 56-58 (June 1959). (2304)

Carding, drawing, and roving production data tables for simplifying cardroom production calculations are given. Tables.

THEORETICAL STUDIES ON THE DOFFER CYLINDER DIAMETER ON WOOL CARDING MACHINES. E. Boroczy. Faserforsch. u. Textiltech. 10, No. 2: 67-75 (1959). In German. Through BCIRA 39: 2030 (1959). (2305)

The behavior of fibers during their transition from the main cylinder to the doffer is examined, and it is shown that the fibers form more uniform layers on a doffer with a larger diameter. This equalizing action was determined mathematically, assuming that, owing to the layer formation on the larger doffer cylinder, smaller fiber condensation would give a sufficiently uniform roving. A method is proposed which would enable utilization of the advantage of large doffers for increasing the production and improving the regularity. Examples are given to show how a condenser card can be tested for its equalizing action, and how the optimum cylinder load can be calculated for a given spinning task.

MILL REPORT ON METALLIC CLOTHING IN CARDING. Canton Cotton Mills. Textile Inds. 123: 85-91 (June 1959). (2306)

The procedures used in installing and repairing metallic clothing are described, and the resultant savings on waste and labor, as well as increase in fabric quality, are noted. Photos, diagr, tables.

REGULATING SYSTEMS FOR SLIVER EQUALIZATION. PART 1. REVIEW OF VARIOUS METHODS FOR SLIVER EQUALIZATION. PART 2. COMPARISON OF VARIOUS CONTROL METHODS. W. Wegener and H. Bechlenberg. Textil-Praxis 14, No. 1: 35-41; No. 2: 128-132 (1959). In German. Through BCIRA 39: 1785 (1959). (2307)

Patent literature is reviewed and the essential characteristics of various methods and devices for the automatic equalization of slivers are compared, with special reference to mechanical, pneumatic, hydraulic, photoelectric, and electronic sliver-thickness measuring and controlling devices.

Drawing and roving B3

DEVELOPMENTS IN DRAWFRAME DRAFTING. W. Nutter. Textile Recorder 77: 58-60, 75 (June 1959). (2308)

The fundamental considerations in drawframe drafting, sliver regularity, and fiber parallelization are discussed, and various modern drafting systems are described and illustrated. Diagrs, graphs.

MULTIPURPOSE SPEED FRAME DRAFTING SYSTEM. Textile Recorder 77: 76, 78 (June 1959). (2309)

Features of the Casablancas U3 system, suitable for all fibers up to 3-1/2 in., are described. Photo, diagrs.

EFFECT OF VARIOUS PREPARATORY AND SPEED-FRAME PROCESSES ON THE IRREGULARITY OF COTTON YARNS AND FABRICS. W. Wegener and H. Peuker. Melliand Textilber. 40, No. 1: 17-22; No. 2: 126-132 (1959). In German. Through BCIRA 39: 1789 (1959). (2310)

The effect of different spinning plans on the yarn and fabric irregularity is investigated, with special reference to the classical spinning process on the two-frame system (slubbing and intermediate frames), on the one hand, and on the high-draft speedframe or slubbing frame, on the other. The length-variation behavior of the yarns obtained in this manner shows that the high-draft speedframe is equivalent to the two-frame system. The use of the slubbing frame alone, which gives a thicker roving, produces yarns with higher, statistically significant irregularity; an increased, 2.4-fold preliminary draft on the ring spinning machine has thereby a greater adverse effect on the corresponding length-variation behavior than the 1.1-fold preliminary draft. These results are confirmed by the mean breaking-load values, spectrograms, fabric appearance, and area-variation curves obtained.

DISTRIBUTION OF TWIST IN ROVINGS OF VARIABLE DIAMETER. H. W. Holdaway (Wool Textile Research Labs., CSIRO). J. Textile Inst. 50: T373-T384 (May 1959). (2311)

An experimental investigation was made of the distribution of twist rate along wool rovings which were intermittently subjected to increased draft so as to exhibit variations in diameter. After adjustment by the method of least squares to conform to a fundamental geometrical condition, the observations were found empirically to satisfy a linear relationship between the reciprocal of the twist rate and the diameter of the roving. The effects of varying the tension and augmenting the total twist in a length of the roving were also examined. Photo, graphs, 2 refs.

Spinning, winding, twisting B4

PLOTTING AND COMPARISON OF VARIANCE-WITHIN- AND VARIANCE-BETWEEN-CURVES OF YARNS PRODUCED BY DIFFERENT SPINNING METHODS. W. Wegener. Forschungsber. Wirtsch. u. Verkehrsmin. Nordrhein-Westfalen No. 632: 1-70 (1958). In German. Through BCIRA 39: 2041 (1959). (2312)

Yarn irregularities brought about by the choice of raw material and the spinning method used are discussed, with special reference to the principles of length-variation calculation, determination of the length-variation curve (by cutting, and weighing, and by the continuous or discontinuous integration method), and use of the length-variation-curve (in examining the yarn-fabric relationship and evaluating the spinning process). The external length-variation curve CB(L) is especially recommended as a criterion of yarn quality.

WHAT SPINNING DRAFT DOES TO YARN. J. Simpson and C. L. Sens (So. Reg. Research Lab.). Textile Inds. 123: 108-114 (June 1959). (2313)

The results of a study on short, medium, and long staple cottons processed as single rovings over a wide range of drafts on both the Casablanca double apron and the Shaw single-apron type SS-2 drafting systems are reported. Graphs, tables, 9 refs.

EFFECT OF THE CARDED YARN SELFACTOR AND RING SPINNING MACHINE ON THE IRREGULARITY OF YARNS AND WOVEN AND KNITTED FABRICS. W. Wegener and H. Peuker. Z. ges. Textil-Ind. 61, No. 5: 155-164; No. 6: 206-213 (1959). In German. Through BCIRA 39: 2040 (1959). (2314)

The method described makes it possible to detect yarn and fabric irregularities (length variations in the fiber mass, and twist, appearance, strength and elongation irregularities, and area variations and appearance) produced by the selfactor and the ring spinning machine, respectively. The results discussed refer to 3 yarns, 2 spun on ring spinning machines provided with various twisting tube constructions, and 1 on the selfactor.

MECHANICAL TESTS ON SPINNING TRAVELERS. G. Merenyi. Textil-Praxis 14, No. 3: 229-235 (1959). In German. Through BCIRA 39: 2038 (1959). (2315)

The mechanical conditions during flying off and breaking of travelers are examined, with a view to elucidating the causes of these phenomena and finding means for their elimination. An attempt is made to find the solution to two problems: (1) whether the traveler deformation produced during spinning, together with the maximum bending moment acting on the traveler, would cause the latter to open and, consequently, to drop off; (2) whether the deformation produced could cause a sufficiently high bending tension to exceed the bending strength and to lead to breakage of the traveler. The measurements were carried out by means of a special device for testing travelers developed in the Hungarian Institute for Textile Technology, and the results were evaluated statistically.

HAMEL ELEKTROMAT FOR THE ELECTRICAL CONTROL OF FANCY DOUBLING MACHINES. R. Liesegang. Melliand Textilber. (English ed.) 40, No. 2: 72-76 (1959). (2316)

The mechanism of the Hamel Elektromat, by means of which irregular effects in fancy yarns may be produced without forming patterns in finished fabrics, is described and directions for its operation are given. Photos, diagrs.

FANCY YARN TWISTING MACHINE OF THE BERLINER TEXTILMASCHINEN-GESELLSCHAFT. K. Weigel. Melliand Textilber. 40, No. 2: 138-143 (1959). In German. Through BCIRA 39: 1792 (1959). (2317)

Details are given of the gears and driving mechanism of the new machine. The delivery rollers are controlled by electromagnetic couplings, the connection of which is effected by an electronic relay, using a photocell for its actuation. Reversing gears with fine graduation enable accurate calculation of any given pattern.

PROFILE OF COP-BUILD RING BOBBINS. H. Catling and A. E. De Barr (Shirley Inst.). (Letter to the editor). J. Textile Inst. 50: T385-T389 (May 1959). (2318)

The relation between the velocity of the ring-rail relative to the package over the length of the chase in spinning cop-build packages and the profile of the chase on the package is investigated, and a general equation is given connecting these two quantities. The special cases of a linear ring-rail package velocity and a linear chase profile are discussed briefly.

OPTIMUM PRELIMINARY DRAFT CONDITIONS ON THE RING SPINNING MACHINE DURING MANMADE FIBER PROCESSING. E. Kirschner. Textil-Praxis 14, No. 2: 122-129 (1959). In German. Through BCIRA 39: 1788 (1959). (2319)

The effects of the processes taking place in the preliminary drafting zone of the ring spinning machine on the properties of manmade fiber yarns are examined, and the theoretical relationships between preliminary draft, drafting-zone width, and yarn regularity are discussed. Literature references to the critical draft range are reviewed, and it is shown that there is no critical preliminary draft range in spinning manmade fibers. For rayon staple fibers, favorable Uster values and the best spectrograms were obtained in a draft range where slip-stick cycles may be expected in the preliminary zone. Preliminary drafts of 1.25-1.30 and a wide preliminary zone were found almost generally applicable in manmade fiber spinning. 15 refs.

CRITICAL DRAFTING RANGE DURING SPINNING OF MANMADE FIBERS. E. Simon. Melliand Textilber. 40, No. 1: 8-11 (1959). In German. Through BCIRA 39: 1787 (1959). (2320)

Experiments showed that there is no critical draft range for manmade fibers. For the older drawframes with selfweighted feed rollers, low preliminary drafts in the range of 1.1-1.25 are most favorable; for new drawframes with increased load, which can be obtained by spring pressure or pneumatically, the optimum preliminary draft ranges between 1.25 and 2.3 (hitherto regarded as the critical draft).

STUDY OF THE EFFECT OF FIBER HUMIDITY ON DRAFTING BEHAVIOR AND YARN REGULARITY. J. Lünenschloss. Textil-Praxis 14, No. 2: 111-118 (1959). In German. Through BCIRA 39: 1786 (1959). (2321)

Some changes in fiber properties in dependence of its moisture content are pointed out (rigidity, fiber surface and fiber friction, adherence of foreign substances, electrostatic charge), and the relationship between moisture content of the fiber, relative air humidity and temperature, the establishment of moisture equilibrium, and the effects of fiber humidity on cohesive length and on yarn regularity over long and short lengths are discussed.

STUDY OF THE EXTENSION OF WOOLEN YARN DURING WINDING AND OF ITS SUBSEQUENT RELAXATION. A. Rae (Wool Ind. Research Assoc.). J. Textile Inst. 50: P224-P237 (May 1959). (2322)

An account is given of an investigation of some factors influencing the extension of a woolen yarn during winding and of its subsequent relaxation. The work is reported in 3 main sections: (1) the effect of separate factors on extension, (2) the cumulative effect of successive winding tensions, and (3) the retained extension of a stretched yarn after subsequent relaxation. Diagr, graphs, tables.

RINGFRAME FOR WORSTED, SYNTHETICS, AND BLENDS. J. & T. Boyd Ltd. Textile Mfr. 85: 232-233 (May 1959). (2323)

The Boyd frame has no driving cylinders, tapes, or aprons. It has a draft range of 5 to 20 and includes needle bearing front rollers and quick release loading. Photos.

COUNT ENDS-DOWN THE EASY WAY. R. Watkins. Textile World 109: 52-53, 146 (June 1959). (2324)

The application of the ratio-delay control method for checking ends-down in spinning is described. Graph.

WHY MODERNIZE SPINNING? B. Keever (F. A. Young Mach. Co.). Textile Bull. 85: 61-65 (May 1959). (2325)

The advantages of modernization vs replacement and the factors to be considered in such a program are discussed. Changeovers at two mills are described. Photos.

Yarns B5

DEVELOPMENTS IN HIGH TENACITY RAYON YARNS. J. P. Jones (Courtaulds Ltd). Textile Weekly 59(1): 1325-1329 (May 22, 1959). (2326)

Strength increases in viscose rayon yarn are traced from its initial discovery in 1895 to the development of Tenasco Super 105 for tire cords in 1957.

BREAKING STRENGTH OF HYDROLYTICALLY DEGRADED YARNS. S. S. Trivedi and A. G. Chitale (Ahmedabad Textile Ind. Research Assoc.). (Letter to the editor). J. Textile Inst. 50: T390-T392 (May 1959). (2327)

Experiments are presented which show that after hydrolytic degradation mercerized cotton yarn shows higher strength and fluidity than unmercerized cotton yarn. Graphs, 7 refs.

ROPE YARNS AND THEIR LAYING. A. Blümcke. Melliand Textilber. 40, No. 1: 11-17 (1959). In German. Through BCIRA 39: 1795 (1959). (2328)

Types of fibers used in rope making, preparation of the yarn, calculation of rope strength, and rope laying (by hand and by rope laying machines) are discussed.

ASBESTOS YARNS. German Standards Comm. Melliand Textilber. 40, No. 1: 23 (1959). In German. Through BCIRA 39: 1899 (1959). (2329)

The German standard draft DIN 60 650 specifies the fineness and commercial count range, twist and twist direction, and packaging of asbestos yarns.

TEXTURED YARNS. Am. Fabrics No. 46: 49-60 (Spring 1959). (2330)

Survey of kinds of textured yarns and their properties, manufacture, and end uses. Fabric swatches. Photo, diagrs, table.

REELING PROBLEMS EASILY SOLVED BY MODERN MACHINES. W. Schmidli. Indian Textile J. 69: 388-391 (Apr. 1959). (2331)

Reeling problems and reeling machine developments are discussed. Diagrs, tables.

BLENDING, SPINNING, AND DYEING NYLON FOR CARPETS. Brit. Nylon Spinners Ltd. Textile Mfr. 85: 216 (May 1959). (2332)

FABRIC PRODUCTION C

Warping, slashing, yarn preparation C1

YARN REELING MACHINE. Melliand Textilber. (English ed.) 40, No. 2: 80, 82 (1959). (2333)

The features include an electric end stop motion and special hank doffing device.

REELING PROBLEMS SOLVED WITH MODERN MACHINES. W. Schmidli (Croon & Lucke GmbH). Can. Textile J. 76: 51-53 (May 29, 1959). (2334)

The problems inherent in producing yarn hanks, and the development of modern machines for overcoming these problems are discussed. The advantages of the change reel and double reeling machines over the older single swift model are cited as examples of this development. Photos, diagr, tables.

YARN REELING MACHINE. Melliand Textilber. 40, No. 1: 22 (1959). In German. Through BCIRA 39: 1804 (1959). (2335)

The machine, suitable for various yarn types, is described and illustrated (Gebrüder Meyer).

PREPARATORY MACHINES FOR SETTING UP PREPARED WARPS. J. Schneider. Rayonne et Fibres Synthet. 15, No. 2: 184-195 (1959). In French. Through BCIRA 39: 2061 (1959). (2336)

Modern techniques of warp preparation, and warp knotting and drawing-in mechanisms are reviewed.

FAULTY SETTING OF THE CONE WARPING MACHINE. H. Wölfel. Textil-Praxis 14, No. 3: 274-276 (1959). In German. Through BCIRA 39: 2060 (1959). (2337)

Incorrect setting in dependence of warping length is discussed to show the importance, for long rayon warps, of careful adjustment of the cone angle, forward movement of the bracket, and sheet width. A brief description is also given of a method for accurate determination of the sheet width at a diagonally-arranged reed.

YARN TENSION CONTROL IN WINDING. PART 2. D. Brunnschweiler. Textile Recorder 77: 64-66, 75 (June 1959). (2338)

The effects of unwinding accelerators, the distance of the first guide point from the ring tube, and winding speeds are discussed. Photos, graphs, 2 refs.

PREVENTIVE MAINTENANCE FOR SPOOLERS AND WARPERS. Textile World 109: 49 (June 1959). (2339)

Daily, weekly, monthly, quarterly, and annual checklists.

EXAMINATION OF WINDING DEVICES IN LINEN AND HALF LINEN WEAVING. H. Griese and H. Weyden. Textil-Praxis 14, No. 3: 261-268 (1959). In German. Through BCIRA 39: 2058 (1959). (2340)

Differences between the available braking elements (disc brakes, clasp brakes, and compensation brakes) and their effect on yarn tension are discussed, with special reference to the frame used for testing the thread brakes, determination of the overrunning tension, effect of thread velocity, preliminary tension, and the effects of balloon limiting devices on its development. Differences between the various brake types consist in their different sensitivity to variations in preliminary tension and velocity.

SELECTOR. S. Fleischer. Melliand Textilber. 40, No. 3: 254-256 (1959). In German. Through BCIRA 39: 2062 (1959). (2341)

A new method of drawing-in the warp threads into drop wires and heddles by means of the Selector device (Titan A./S.) is described. The Selector separates the individual warp threads by means of a chain-stitch and can be adjusted to a sewing velocity of up to 16,000 threads per hr. Combined with a reaching-in machine, it replaces 8-10 ordinary reaching-in machines.

SIZING MATERIALS FOR SYNTHETIC FIBER YARNS. PART 2. Man-Made Textiles 36: 46, 48 (June 1959). (2342)

New sizes based primarily on vinyl acetate, maleic acid, butadiene, and aromatic carboxylic acids are described.

SIZING MACHINES FOR PERLON WARPS. R. Fritsche. Melliand Textilber. 40, No. 1: 30-31 (1959). In German. Through BCIRA 39: 1806 (1959). (2343)

Directions are given for sizing Perlon warps on the cylinder sizing machine (several constructors of this machine are named). Reference is also made to the possibility of using the air-drying sizing machine, although the latter has some disadvantages.

Weaving C2

FROHLICH DISMOUNTABLE HEDDLE FRAME. Melliand Textilber. (English ed.) 40, No. 2: 104 (1959). (2344)

Diagr.

REMOVABLE HEDDLE SHAFT. Melliand Textilber. 40, No. 1: 26 (1959). In German. Through BCIRA 39: 1811 (1959). (2345)

A brief description and an illustration are given of the shaft (Fröhlich system) which can be easily dismantled to alter the number of shafts in the harness, if required.

TIPS ON BATTERY FILLING. C. H. Ash. Textile Inds. 123: 99-100, 103-104 (June 1959). (2346)

In addition to the instruction tips, a poster is included to illustrate the five major steps used in battery filling.

THREE-COLOR AUTOMATIC SHUTTLE-CHANGE ATTACHMENT. O. Schöneberg. Melliand Textilber. 40, No. 3: 263-269 (1959). In German. Through BCIRA 39: 2065 (1959). (2347)

Further development of the Merveille 2-color automatic shuttle-changing mechanism (abstr. 4088/58) led to the construction of the 3-color pick-and-pick mechanism described, which can be fitted on all dobby and jacquard looms with drop-boxes on both sides.

HIGH EFFICIENCY UNIVERSAL RIBBON LOOM. H. Rittinghaus. Melliand Textilber. (English ed.) 40, No. 2: 93-98 (1959). (2348)

The high speed Universal ribbon loom (P. F. Reinshagen) is described and illustrated.

TWO-SHUTTLE LOOMS FOR THE PRODUCTION OF PLAIN AND JACQUARD CARPETS. H. Osswald. Melliand Textilber. (English ed.) 40, No. 2: 88-93 (1959). (2349)

The construction and operation of two-shuttle double carpet looms (Felix Tonnar GmbH) are described, and their advantages and limitations are discussed. Photos, diagrs.

GEARS AND ELEMENTS FOR SHUTTLE CHANGING ON THE LOOM. W. Swatek. Melliand Textilber. 40, No. 2: 154-158 (1959). In German. Through BCIRA 39: 1812 (1959). (2350)

Various types of box motions are described and illustrated.

EFFECT OF WEFT YARN IRREGULARITY ON PICKSPACING AND WEFT COVER FACTOR. K. Greenwood and G. N. Vaughan (Brit. Rayon Research Assoc.). J. Textile Inst. 50: T337-T352 (May 1959). (2351)

It is shown that long-period count variations in the weft yarn cause variations in pickspacing which to some extent compensate for the effect of yarn irregularity on the weft cover factor. The significance of this fact in relation to the diagnosis of weft bars, to fabric design, and to loom design, is pointed out. It is further shown how the variations in pickspacing and cover factor can be calculated if the variation in weft count and the relation between cloth fell position, weft count, and pickspacing are known. Graphs, tables, 2 refs.

PRODUCTION OF TIRE CORD FABRICS ON CORD-WEAVING INSTALLATIONS. M. Michelitsch. Melliand Textilber. 40, No. 2: 145-147 (1959). In German. Through BCIRA 39: 1810 (1959). (2352)

A new tire fabric weaving machine (Webstuhlfabric Günne) is described, with special reference to the preparation of the warp and the actual weaving process.

ASTRA UNIVERSAL HIGH SPEED LOOM, RW MODEL. G. Hofmann. Melliand Textilber. 40, No. 2: 147-150 (1959). In German. Through BCIRA 39: 1809 (1959). (2353)

The machine described, which is of lighter construction than the GM model, is designed for high speed weaving of light to medium-heavy fabrics from rayon, wool, cotton, and spun rayon.

PROCEDURE FOR ANALYZING THE ACCELERATION AND UNEVEN RUNNING OF LOOMS. M. Jederan. Magyar Textiltech. No. 5/6: 238-241 (1957). Through BCIRA 39: 2068 (1959). (2354)

An impulse-type method has been developed by which the momentary rev/min values can be determined with a deviation of $\pm 1.25\%$. Comparative tests on looms driven directly and through a clutch prove that acceleration must be evaluated from the momentary rev/min values pertaining to the position of the main shaft and the total energy at the moment of the blow. The advantage of the clutch lies in the increase of energy at the blow and not in the increased steepness of the acceleration curve. A considerable proportion of the kinetic energy of the driving member of the clutch is dissipated as heat, and is related to the masses of the clutch and the loom. There is a close relation between the curves of acceleration of uneven running and the momentary moment of inertia referred to the main shaft. The load on the driving motor increases, and the curve of acceleration flattens out during the increase stage of the reduced moments of inertia. The phenomena is also observed in steady operation.

HOW TO MAKE FANCY TERRY. PART 3. T. Hargreaves. Textile Inds. 123: 123-124 (June 1959). (2355)

The selection of jacquards for weaves basically different from the usual three-pick terry construction are discussed.

WARP LETOFF AND BRAKE DEVICE. J. Weiner. Spinner u. Weber 77, No. 6: 311-312 (1959). In German. Through BCIRA 39: 1813 (1959). (2356)

The construction of the device (Eisenwerk Ph. Kurtz, Hasloch/M) and its mechanism are described and illustrated. Two types (IB2 and IB3), constructed as inner shoe brakes, are available.

IDEAS UNDERLYING LOOM PATENTS. PART 1. R. H. Rossmann. Textil-Praxis 14, No. 2: 139-141 (1959). In German. Through BCIRA 39: 1807 (1959). (2357)

In this review, the author discusses the state of technology, experiments relating to modifications of the weaving process, patents as archives of ideas, the invention of new looms and new developments, to show why the numerous patents applied for in the last few decades have found no practical application.

IDEAS BEHIND LOOM PATENTS. PART 2. R. H. Rossmann. Textil-Praxis 14, No. 3: 276-281 (1959). In German. Through BCIRA 39: 2064 (1959). (2358)

The main German patents concerned with circular looms are reviewed, with reference to their construction, advantages and disadvantages, and the reason why they were never introduced in practice.

AUTOMATION IN THE WEAVING INDUSTRY. H. Sannig. Melliand Textilber. (English ed.) 40, No. 2: 82-88 (1959). (2359)

Factors to be considered in the conversion of existing looms to automatic ones, with special reference to Valentin attachments, are discussed. Photos.

ONEMACK SHUTTLELESS LOOM FOR JUTE PACKAGING CLOTHS. James Mackie & Sons Ltd. Textile Merc. 140: 678-680 (May 22, 1959). (2360)

The features and advantages of the Onemack loom are summarized. Photo.

LOOM SETTING MADE EASY. O. Reiter. Melliand Textilber. (English ed.) 40, No. 2: 99-104 (1959). (2361)

A brief review is made of the Illset system (abstr. 1221/58) which makes it possible to adjust accurately all looms weaving the same type of fabrics.

LOOMFIXER AND HIS JOB. PART 6. W. Westbrook. Textile Bull. 85: 68, 70 (May 1959). (2362)

The proper operation of various types of loom drives, the method for replacing friction plate cork inserts, and the sequence of operations in setting the No. 3 Draper-Diehl power transmitter are described. Photos, diagr.

HOW MILLS WEAVE POLYETHYLENE YARN. Textile World 109: 54-55 (June 1959). (2363)

The weaving of prestretched polyethylene yarns on standard looms is described.

LOOM CLOTH TAKEUP MECHANISMS. M. D. Erfeew. Textil-Praxis 14, No. 2: 143-147 (1959). In German. Through BCIRA 39: 1814 (1959). (2364)

Experiments confirmed that, in the case of positive cloth-beam regulators, the weft density remains constant, independently of changes in the weft count, if the warp tension is suitably adjusted. With the negative cloth-beam regulator, the fabric can be produced at a lower warp tension than with positive regulators; this is of particular importance in weaving woolen yarns. A negative regulator in conjunction with a warp-beam brake gives a fabric with a weft density directly proportional to the square root of the weft-yarn count. For fabrics with a low cover factor, it is advisable to equip the looms with both negative and positive regulator systems.

Knitting C3

KNITTED SAMPLE COST CONTROL. H. R. Danzis (George S. May Co.). Textile Inds. 123: 144-145 (June 1959). (2365)

A cost system which enables mill management to keep the sales division informed on labor costs in sample making is described.

MODERN TECHNIQUES IN MACHINERY MAINTENANCE. PART 3. V-TYPE AND HORIZONTAL BED MACHINES. J. B. Lancashire. Hosiery Times 32: 31-32 (June 1959). (2366)

WHAT'S NEW IN KNITTED OUTERWEAR? C. Reichman. Modern Textiles Mag. 40: 65-68, 87 (June 1959). (2367)

Some of the important new developments in knitted outerwear manufacturing shown at the 44th Knitting Arts Exhibition are described.

Fabrics C4

INTERPRETATION OF FIBER PROPERTIES. PART 1. ROLE OF SINGLE FIBER FLEX FATIGUE IN ABRASION RESISTANCE OF FABRICS. T. B. Lefferdink and H. P. Briar (Dow Chem. Co.). Textile Research J. 29: 477-482 (June 1959). (2368)

The resistance of fibers to fracture due to fatigue in flexure is shown to correlate with the wear life of socks and can be used to explain other fabric abrasion resistance phenomena. When single fibers are flexed over a rounded metal bar, the log of the number of flexures to failure has been found to be approximately linearly related to the radius of curvature of the surface of the bar and to the tension on the fiber during the test. An empirical equation is presented relating these variables along with some of the determined values for the various proportionality constants for several common fiber types. The relative resistances of different types of fiber to scraping and grinding actions of emery particles was measured and compared with the generally accepted abrasion resistance of fabrics of these fibers. The correlation was so poor as to indicate only a slight probability that the grinding mechanism plays an important role in normal fabric abrasion. Diagrs, graphs, tables, 5 refs.

CORRESPONDENCE REGARDING "MOISTURE REGAIN OF TIGHTLY WOVEN FABRICS." R. F. Nickerson (Shawinigan Resins Corp.). (Letter to the editor). Textile Research J. 29: 522 (June 1959). (2369)

SHEAR EFFECTS IN GLASS FIBER REINFORCED PLASTICS LAMINATES. R. E. Chambers and F. J. McGarry. ASTM Bull. No. 238: 38-41 (May 1959). (2370)

The purpose of the investigation described was to study the effects of interlaminar shear on the flexural modulus. Graphs, tables, 2 refs.

CHARACTERISTICS AND RATE OF WEAR OF WORSTED SERGE IN TROUSERS. R. P. Dowlen and R. L. Ward (U. S. Agri. Research Serv.). Textile Research J. 29: 514-520 (June 1959). (2371)

The purpose of this research was to determine the characteristics and rate of wear of a serge fabric manufactured from 58s grade wool of known genetic origin. The worsted material was made into trousers that were worn by college men during one, two, or three academic years. This investigation of performance in end use of an apparel textile included periodic evaluation of appearance and measurement of physical properties as a basis for determining the rate of deterioration of the fabric during wear and drycleaning. Photos, diagr, graphs, tables, 4 refs.

RUBBER LATEX AND CARPETS. PART 1. TUFTED CARPETS. B. A. Wallace and E. J. P. Reynolds. PART 2. LATEX FOAM INTEGRATION. S. B. Cant. Rubber Dev. 11, No. 4: 112-115 (1958); 12, No. 1: 2-5 (1959). Through BCIRA 39: 2112 (1959). (2372)

The first article outlines the principles of methods used for the application of latex backings to tufted carpets. A continuous process for the integration (direct application) of foam latex to carpets and fabrics is described in the second article. Uses of foam backed materials are briefly discussed.

COBBLE'S LOOP-CUT MACHINE. Cobble Bros. Machy. Co. Am. Textile Reptr. 73: 19, 23 (June 18, 1959). (2373)

The combination loop-cut machine is capable of making cut pile and loop pile from the same needle and in the same row of stitching. By combining the operation of the new loop-cut attachment with Cobble's universal type pattern attachment or the double end control scroll type attachment, designs can be made in a relief or sculptured pattern. Features of the loop-cut machine and of the Cobble single end scroll pattern unit for tufted carpets are described. Photos.

WOVEN CARPETS. H. Osswald. Melliand Textilber. 40, No. 1: 33-36 (1959). In German. Through BCIRA 39: 1816 (1959). (2374)

The weaving techniques used in the mechanical production of woven pile carpets, and the looms and Jacquard machines used are described.

HESSIAN BACKING FOR TUFTED CARPETS. James Briggs & Sons Ltd. Dyer 121: 929 (June 5, 1959). (2375)

It is suggested that the soiling of tufted carpets due to the type of oil used in the manufacture of the backing could be eliminated by the use of the light scouring oils used in spinning the pile yarns.

FIBER PLASTIC MATERIALS: PROCESSES AND POSSIBILITIES. A. J. Hall. Fibres 20: 225-230 (July 1959). (2376)

The combination of fibers and plastics used in some of the newer forms of textile materials, with particular reference to floor covering products, leather substitutes, and glass fiber insulating tapes, is discussed. Photos, diagrs.

WEFT PILE FABRICS. A. Scaltritti. Riv. Tessile 13, No. 12: 1301-1308 (1958); 14, No. 1: 49-54; No. 3: 255-258 (1959). In Italian. Through BCIRA 39: 2074 (1959). (2377)

Corduroy, velvets, and patterned velvets are reviewed.

TUFTED TEXTILES: PROGRESS REPORT. Man-Made Textiles 36: 95-114 (June 1959). (2378)

Introduction, p. 95; Industry's view on progress with tufteds, p. 96-106; Backing fabric in the making, p. 108-113; Spinning systems for pile yarn production, p. 114.

MEN'S WASH-AND-WEAR SUMMER SUITS. Consumer Repts. 24: 350-353 (July 1959). (2379)

Seventeen wash-and-wear (9 Dacron/Orlon and 8 Dacron/cotton) men's summer suits were laundered and test-rated. Table.

RECENT ACHIEVEMENTS OF MANMADE FIBERS IN HEAVY DUTY INDUSTRIAL TEXTILES. Man-Made Textiles 36: 40-42 (June 1959). (2380)

Some new industrial uses for manmade fibers are discussed.

DESIGN IN WOVEN STRUCTURE. PART 74. FANCY BEDFORD CORD EFFECTS. L. C. Snowden. Wool Rev. 32: 33 (June 1959). (2381)

BOUCLE, KNOT, AND LOOP EFFECTS IN WOVEN FABRICS. N. Lamberz. Z. ges. Textil-Ind. 61, No. 7: 257-264 (1959). In German. Through BCIRA 39: 2075 (1959). (2382)

Directions are given for the production of fancy yarns and for designing the fabric made from them and the weaving technique. Defects occurring in fancy-yarn weaving are pointed out.

DESIGN OR PRODUCTION OF DIFFERENT TYPES OF FABRICS WITHOUT RESORTING TO PREVIOUS ANALYSIS OR TESTING. V. G. Escobet. Ingenieria Textil 25, No. 135: 453-459 (Nov./Dec. 1958). In Spanish. Through BCIRA 39: 1815 (1959). (2383)

Examples are given for calculating the construction, weight per sq m, and the density of a fabric.

WOVEN FABRIC STRUCTURE: PRINCIPLES OF GRANITE WEAVE DESIGNS. D. C. Snowden. Man-Made Textiles 36: 45 (June 1959). (2384)

FRICTION MATERIALS. A. A. K. Whitehouse (Ferodo Ltd). Research 12: 206-211 (June 1959). (2385)

The development of brake linings and other friction materials is traced. For the most severe application, even asbestos linings are inadequate and sintered metal or cermet friction materials must be used. Photos, graph, 4 refs.

PROBLEMS OF QUALITY CONTROL FOR THE RETAILER. T. Fenn (Littlewoods Mail Order Stores Ltd). Textile Merc. 140: 686-688 (May 22, 1959). (2386)

The role of the textile technologist on the retail level must include both the performance testing and analysis of fabrics and the advising of consumers on the service, use, care, and cleaning of fabrics.

NONWOVEN FABRICS: AN UNBIASED APPRAISAL. A comprehensive report for industry prepared by graduate students of the Harvard Business School. Nonwovens Associates, P. O. Box 328, Cambridge 39, Mass. 1959. 143 p. $15.00. (2387)

Contents: Introduction; manufacturing; finishing and dyeing; fibers; binders; properties and applications; research and development; marketing; implications for the future; appendix A: secrecy; appendix B: patents (includes a list of nonwovens patents 1936-1958); appendix C: acknowledgements; appendix D: companies concerned with the nonwoven fabrics industry; appendix E: bibliography (94 refs.); appendix F: glossary of technical terms.

ANALYSIS OF THE TEXTILE FIBER PRODUCTS IDENTIFICATION ACT. H. E. Rothchild (Rothchild Printing Co.). Am. Textile Reptr. 73: 41, 43 (May 21, 1959). (2388)

The important points of the new act are summarized and analyzed.

BLENDS OF WOOL-TYPE FABRICS. H. Bogaty and N. R. S. Hollies (Harris Research Labs.) and C. J. Monego. Quartermaster Research and Engineering Center, Natick, Mass. Aug. 1958. 87 p. Textile series report no. 98. Order from Library of Congress, Photoduplication Serv., Washington 25, D. C. Microfilm $4.80, photostat $13.80. PB 136 730. (2389)

As a wool conservation measure, the use of synthetic fibers to replace wool in 16- and 8-oz cold weather combat clothing fabrics was explored. Such commercially-available synthetic fibers as Acrilan, Dacron, dynel, nylon, Orlon, Vicara, and viscose were considered in 2- and 3-fiber blends. The results indicated that, insofar as insulation is concerned, the substitution of short, crimped synthetic fibers in a low-twist yarn, and of an open-textured weave appropriately fulled, maintains the desirable insulating qualities of all-wool. With respect to flame and thermal protection, the chemical composition of the synthetic fibers appear most important, but the data show that fabric structure also influences the degree of protection. There is no great difference in appearance between the synthetic blended fabrics and all-wool. The durability of the blended fabrics was found to be equal to or, in the case of high strength fibers, significantly greater than, all-wool. Production of these blends proved feasible and offered no problems. 45 refs.

MOTHERS DISCUSS COTTON AND OTHER FIBERS IN CHILDREN'S CLOTHES. M. Weidenhamer. U. S. Agri. Mktg. Serv., Washington 25, D. C. Feb. 1959. 18 p. AMS-294. (2390)

This report deals with use of and preferences for cotton and other fibers in selected items of children's clothes, as reported by over 2,400 mothers of children 1 through 13 years of age. Tables.

FELISOL: AN INTERNATIONAL INFORMATIVE LABEL FOR COLORFASTNESS. K. McLaren (Imp. Chem. Inds. Ltd). J. Soc. Dyers Colourists 75: 237-242 (May 1959). (2391)

A historical account of the development of the International Association for the Felisol Fastness Label, with special reference to the technical problems of issuing an informative label concerned with colorfastness. 3 refs.

ACETATE: A BASIC FIBER FOR NONWOVENS. J. L. Barach and H. W. Coates (Celanese Corp.). Am. Dyestuff Reptr. 48: 43-49 (June 1, 1959). (2392)

The authors discuss: the place of nonwoven fabrics in the textile industry; the techniques used in their manufacture; the advantages of acetate fibers for nonwovens; and an analysis of the reasons for the success of the most widely used nonwovens. Diagrs, tables, 65 refs.

FINISHING AND CHEMICAL PROCESSING D

EUROPE'S MODEL TEXTILE FINISHER. F. G. C. Meyer (Koniklijke Twentse Stoomblekerij). Am. Dyestuff Reptr. 48: 31-36 (June 1, 1959). (2393)

The plant and machinery of the recently modernized Royal Twentsche Steam Bleachery, Goor, Holland, is described in detail. Photos, diagrs.

DYEING AND FINISHING OF WEFT PILE FABRICS. G. Capron. Rev. Textilis 15, No. 1: 12-18; No. 3: 21-25; No. 4: 49-56 (1959). In French. Through BCIRA 39: 2093 (1959). (2394)

Chemical processes D1

PRODUCTION OF ACID RESISTANT TECHNICAL WOOL FABRICS. H. Zahn and W. Gerstner. Forschungsber. Wirtsch. u. Verkehrsmin. Nordrhein-Westfalen No. 498: 1-28 (1957). In German. Through BCIRA 39: 2114 (1959). (2395)

The method described for determining quantitatively the acid resistance of wool yarn consists in boiling the yarn with 0.1 N sulfuric acid for 3 hr under reflux and testing the wet strength of the thoroughly washed sample. It was found that the wet strength of chemically modified wool is impaired if the action of chemicals on the fibers takes place in aqueous weakly-alkaline organic solution at high temperatures. Wool yarn was chemically modified by using 19 different methods. Water insoluble chemicals were used in the form of aqueous emulsions to prevent fiber tendering by aqueous organic solutions. A distinct improvement of acid resistance was obtained by treating the yarn with bis-chlormethyldimethylbenzene, terephthaloylchloride, and quinone. Dinitrophenylation, with simultaneous methylation and acetylation of the wool, was most effective.

CARBONIZING INVESTIGATIONS. PART 6. COMPARISON OF DIFFERENT TYPES OF SURFACE ACTIVE AGENTS IN LABORATORY CARBONIZING. W. G. Crewther and T. A. Pressley (Wool Research Labs., CSIRO). Textile Research J. 29: 482-486 (June 1959). (2396)

Eighty-eight nonionic surface active agents, all containing polyoxyethylene as the hydrophilic group, and some anionic and cationic agents were tested in the laboratory to determine the extent to which they protect wool from loss of tensile strength during carbonizing. Nonionic agents in which the lipophilic portion consists of polyoxypropylene provided little protection even at the highest concentrations tested, whereas nonionic agents containing an alkyl or aryl hydrocarbon group were generally effective. With the latter compounds, the length of the polyoxyethylene group influenced the optimal concentration of the reagent. Anionic agents were ineffective at low concentrations; cationic agents were comparable in their effects with nonionic agents. Graphs, table, 4 refs.

EFFECTS OF COMMERCIAL LAUNDERING ON COTTON WASH-WEAR FABRICS. H. C. Borghetty (Gen. Aniline & Film Corp.). Textile Recorder 77: 72-73 (June 1959). (2397)

It is suggested that discoloration of white wash-and-wear resin finished cotton fabrics during commercial laundering is due primarily to prolonged treatment at high temperatures rather than to the chlorine retention of the resins. Graph, table, 4 refs.

POLYMERS AS RELATED TO FABRIC PROCESSING. D. D. Gagliardi, V. S. Frank, L. H. Perry, and H. F. Mark. Am. Dyestuff Reptr. 48: 37-42, 49 (June 1, 1959). (2398)

Panel discussion.

SHRINKPROOF FINISHING OF COTTON FLANNELETTE SHIRT MATERIAL WITH RESINS. R. Steidl. Melliand Textilber. 40, No. 3: 305-307 (1959). In German. Through BCIRA 39: 2111 (1959). (2399)

Shrinkproofing of cotton flannelettes for sports shirts with Knittex MKU paste is described. Good results are obtained with 8 kg/100 l liquor. The loss of tensile strength does not exceed the usual limits and there is no risk of wear value impairment. Reduction in abrasion resistance is insignificant. No special machines are required, the process is cheap, and the chemically shrinkproofed fabrics can be made up under the usual stresses without overstretching them (as is the case with mechanically finished flannelettes).

CHEMICAL REAGENTS FOR CREASE RESISTANCE. Textile Recorder 77: 67-68, 73 (June 1959). (2400)

Results on the comparative effects of urea-formaldehyde, melamine-formaldehyde, ethylene urea, and non-nitrogeneous aldehyde resins on the crease resistance, strength, and abrasion resistance of cotton and rayon fabrics are presented. Tables, 5 refs.

RECENT DEVELOPMENTS IN FABRIC COATING WITH PLASTICS, WITH SPECIAL REFERENCE TO THE USE OF CHLOROSULFONATED POLYETHYLENE. D. Eisele. Melliand Textilber. 40, No. 1: 84-86 (1959). In German. Through BCIRA 39: 1852 (1959). (2401)

It is shown that coating of fabrics with elastomers is in many respects superior to the application of thermoplasts. The example of chlorosulfonated polyethylene demonstrates how the molecular structure affects its applicability and the properties of the end-product. Reference is also made to the use of fluorinated silicone rubbers, fluorinated acrylates, etc., on inorganic fabrics.

MODERN WASHING ON OLD PRINCIPLES: TWO NEW WASHING MACHINES FOR ROPE AND FULL-WIDTH WASHING. A. Freyberg. Melliand Textilber. (English ed.) 40, No. 2: 106-110 (1959). (2402)

Features and operation of the Multiflex rope washer and Cascade open-width washer are described. Photo, diagrs.

NEWLY DEVELOPED WASHING MACHINES FOR ROPE AND OPEN-WIDTH MATERIAL. A. Freyberg. Melliand Textilber. 40, No. 1: 65-66 (1959). In German. Through BCIRA 39: 1828 (1959). (2403)

Two new washing machines, the rope-washing machine Multiflex and the open-width washing machine Cascade, are described and illustrated.

STABILIZERS IN HYDROGEN PEROXIDE BLEACHING OF CELLULOSIC FIBERS. M. Morgenroth. Spinner u. Weber 77, No. 6: 317-319 (1959). In German. Through BCIRA 39: 1830 (1959). (2404)

The effect of various stabilizers on the course of the bleaching process and on the appearance of the bleached material is studied, four different commercial stabilizers being examined for their oxygen-retaining power and their effect on the drying temperature, and on the degree of whiteness, wettability, and tensile strength of the fabric.

COATED FABRIC FOR USE IN PROTECTIVE CLOTHING. H. N. Homeyer, Jr., and J. Becker. Connecticut Hard Rubber Co., New Haven, Conn. Oct. 1954. 102 p. Available from Library of Congress, Photoduplication Serv., Washington 25, D. C. Microfilm $5.70, photostat $16.80. PB 134 847. WADC TR 54-93. (2405)

Experimental work leading to the development of a chemically resistant coated fabric, suitable for use in protective clothing for personnel handling various fuels and oxidizers used in guided missiles, is described in this report. It is recommended that the coated fabric be used in the fabrication of all clothing designed for the protection of personnel engaged in handling oxidizers and most rocket fuels. Photos, diagr, graphs, tables.

ELECTROSTATIC PROBLEMS ENCOUNTERED IN HYDROPHOBIC FIBERS. A. J. Hall. Fibres 20: 193-197 (June 1959). (2406)

The coating of fibers with polymeric electrolytes is now the favored method for producing permanent washfast antistatic finishes. This article deals with the problems arising from electrostatic formations on electrical nonconductors, and analyzes the advantages and disadvantages of the latest methods of overcoming these problems. Graphs, table, 3 refs.

PREPARATION AND BLEACHING. PART 3. SIZING MATERIALS AND HOW THEY ARE REMOVED. K. S. Campbell (N. C. State Coll. School of Textiles). Textile World 109: 82-83 (June 1959). (2407)

After a description of the composition of the usual cotton sizing agents, typical brushing, singeing, and acid-steeping procedures used for size removal are described.

CONTINUOUS ROTARY POLYMERIZER. John Dalglish & Sons Ltd. Textile Recorder 77: 89 (June 1959). (2408)

The Dalglish-Artos polymerizer is a rotary machine designed to process a number of layers of cloth simultaneously. It has a capacity of about 450 yd of cloth with the result that longer treatment times and lower temperatures are possible. Photo, diagr.

NEW FABRIC FINISHES. PART 1. G. Landells (Bradford Dyers Assoc. Ltd). Textile Weekly 59(1): 597-598, 600 (Mar. 6, 1959); 661-662, 665 (Mar. 13, 1959). (2409)

Developments in crease resist finishes, softeners, polyethylene finishes, optical bleaches, easy care finishes for wool, and in water repellent, oil repellent, and antibacterial finishes are briefly discussed.

NOTES ON CELLULOSE IN RELATION TO BLEACHING. Textile Mfr. 85: 228-231 (May 1959). (2410)

In this brief survey of the mechanism of the bleaching reaction, the effect of the composition of cellulose on bleaching, the oxidation of cellulose in drying, action of hypochlorites, reaction of cellulose with chlorites and hypochlorites, effect of hydrogen peroxide on cellulose, and degradation of cellulose are discussed. 10 refs.

SETTING REDUCED KERATIN FIBERS WITH 1-FLUORO-2,4-DINITROBENZENE. P. T. Speakman (Leeds Univ.). J. Soc. Dyers Colourists 75: 252-254 (May 1959). (2411)

Keratin fibers, when extended, reduced, and allowed to react with 1-fluoro-2,4-dinitrobenzene under either acid or alkaline conditions at 40° C, acquire a permanent set. Unreduced fibers and fibers reduced before extension are not permanently set. The effect may be caused by steric hindrance of mutual movement of protein chains by the large 2,4-dinitrophenyl group, or by hydrogen bonding between the nitro groups and ambient protein chains; or alternatively reaction with 1-fluoro-2,4-dinitrobenzene may alter the stability of the hydrogen-bonded protein system. The experiments seem to confirm earlier results which suggested that on extension certain cystine disulfide residues in the fiber become accessible to attacking reagents, and that these residues, previously inaccessible at 40° C, are those which are essentially involved in permanent setting. Graphs, 10 refs.

PHOSPHORIC ACID IN CHLORITE BLEACHING. J. Bertin-Roulleau. Textil-Rundschau 14, No. 2: 86-87 (1959). In French. Through BCIRA 39: 1829 (1959). (2412)

The advantages of using phosphoric acid in chlorite bleaching liquors (corrosion inhibiting action, possibility of controlling the bleaching rate, protection of fibers) are discussed, and directions are given for the treatment of rayons (viscose type), cellulose acetate, linen or cotton, and nylon fabrics.

DEVELOPMENT OF AND RAW MATERIALS FOR ALIPHATIC SURFACE ACTIVE AGENTS. H. Machemer. Melliand Textilber. 40, No. 1: 56-65; No. 2: 174-179 (1959). In German. Through BCIRA 39: 1827 (1959). (2413)

In this review the author discusses the development of surface active agents from oil and fat, and describes results of experiments carried out with a view to (1) preparing fatfree surface active agents more economically, and (2) elucidating the relationships between the structure of hydrophobic chains and the surface active properties of the products. 84 refs.

Dyeing and printing D2

METHODS OF ASSESSING THE DYEING PROPERTIES OF WOOL DYES. B. Kramrisch (Ciba Clayton Ltd). J. Soc. Dyers Colourists 75: 242-244 (May 1959). (2414)

Methods for assessing such properties as migration, rate of strike, and rate of dyeing are briefly described. Graphs, tables, 4 refs.

DEVELOPMENTS IN DYE CHEMISTRY. PART 1. REMAZOL DYES OF THE FARBWERKE HOECHST AG. H.-U. von der Eltz. Melliand Textilber. 40, No. 1: 69-73 (1959). In German. Through BCIRA 39: 1836 (1959). (2415)

The dye assortment available is listed, and their fastness properties, methods which can be used for their application, their behavior during sulfoethylation, the chemical reaction between the dye and cellulose fibers, and reactivity of various cellulose fibers to Remazol dyes are discussed.

REPLACEMENT OF INDIGO DYESTUFFS FOR USE ON NAVY WOOLEN FABRICS. PART 2. LABORATORY PHASE. G. Bradley. Navy Clothing & Textile Office, Brooklyn, N. Y. June 1958. 21 p. Research and development report no. 27. Order from Library of Congress, Photoduplication Serv., Washington 25, D. C. Microfilm $2.70, photostat $4.80. PB 135 953. (2416)

An evaluation was conducted of 16 oz melton fabric laboratory dyed with experimental chrome dye formulations. Particular emphasis was placed on a visual evaluation of the experimental shades in comparison with the standard indigo-chrome shade. Spectrophotometric methods of analysis were investigated. 8 refs. For part 1 see abstr. 1659/58.

INTERESTING ASPECTS OF DYE ABSORPTION AND CONTROL IN DYEING AND PRINTING. B. C. M. Dorset. Textile Mfr. 85: 237-242 (May 1959). (2417)

The use of dyeing assistants for the control of dye absorption is discussed with pertinent patent and literature references. Graphs.

CELLULOSE ACETATE DYES. PART 1. SYNTHESIS OF AMINOANTHRAQUINONYL ACRYLATES AND PYRIDINOANTHRAQUINONES. K. Sivasankaran, K. S. Sardesai, and S. V. Sunthankar (Univ. of Bombay). J. Sci. Ind. Research (India) 18: 164-168 (Apr. 1959). (2418)

A series of aminoanthraquinones was condensed with diethyl ethoxymethylenemalonate and the resulting acrylates were cyclized to the respective pyridinoanthraquinones. Both the acrylates and the pyridinoanthraquinones were tested as cellulose acetate dyes. The fastness to sublimation and gas fading of all the dyes was satisfactory. The improvement in the gas fading fastness property of the dyes was achieved by lowering the basicity of the amino group while the improvement in lightfastness property was brought about by curbing the electron mobility in the compound by locking up the basic nitrogen. Tables, 4 refs.

NEW DEVELOPMENTS IN DYEING CHEMISTRY: REMAZOL DYES. H.-U. von der Eltz (Farbwerke Hoechst AG). Melliand Textilber. (English ed.) 40, No. 2: 110-118 (1959). (2419)

The fastness properties, methods of application, chemical constitution, and mechanism of action of the Remazol dyes are described. 11 refs.

FASTNESS OF DIRECT, TRIANTIN LIGHT, AND TRICUFIX DYES AT DYEING TEMPERATURES ABOVE 100° C. B. J. Pelle. Tex 18, No. 2: 151-154 (1959). In Dutch. Through BCIRA 39: 2094 (1959). (2420)

The data given in this article with regard to the fastness properties of the above dyes can be used as general directions for the high temperature dyeing of cotton fabrics.

DEVELOPMENTS IN THE FIELD OF INSOLUBLE AZO AND OXIDATION DYES. PART 1. R. Ruf. Textil-Praxis 14, No. 2: 180-183 (1959). In German. Through BCIRA 39: 1834 (1959). (2421)

Special reference is made to the development of Neutrogen dyes and their properties and advantages.

REACTIVE DYES. J. Nüsslein. SVF Fachorgan Textilveredlung 14, No. 3: 152-154 (1959). In German. Through BCIRA 39: 2089 (1959). (2422)

Brief contribution to the history and classification of the dyes.

PIECE DYEING WITH PROCION DYES. R. Bugmann. Textil-Rundschau 14, No. 2: 73-82 (1959). In German. Through BCIRA 39: 1837 (1959). (2423)

The differences in the general behavior, chemical constitution, and dyeing properties of Procion, Cibacron, and Remazol dyes (reactive dyes) are discussed, with special reference to the different behavior of cold-dyeing Procion dyes with the development of a semi-continuous method (pad-batch dyeing method) for their application.

BASIC CHEMISTRY OF DYES AND DYEING. PART 4. W. Postman (Ga. Inst. Technol.). Textile World 109: 91, 94-95 (June 1959). (2424)

The structure and dyeing mechanism of basic, disperse, and natural dyes and pigments are discussed.

BINDING OF DYES BY SOLUBLE WOOL KERATIN DERIVATIVES. B. S. Harrap (Wool Textile Research Labs., CSIRO). J. Colloid Sci. 14: 300-307 (June 1959). (2425)

The binding of 3 acid dyes of slightly differing composition to a soluble wool keratin derivative was measured by the dialysis-equilibrium method. The data satisfy the Klotz-Scatchard equation for the binding of small ions to proteins but the maximum amount of dye bound is much less than that equivalent to the number of basic side chains on the protein, given by amino acid analysis. It seems likely that the guanidino groups of the arginine residues are not able to bind dye anions, and it is suggested that this occurs because they are more firmly bound to other groups on the protein. Intermolecular bonding of this type would account for the high degree of aggregation shown by the soluble wool protein. The influence of pH and ionic strength on the binding of the 3 dyes is discussed in relation to their chemical structure. Graphs, table, 14 refs.

INTEGRATED VERSUS COMMISSION DYEING: WHO HAS THE ADVANTAGE? R. W. Jacoby. Modern Textiles Mag. 40: 44, 64 (June 1959). (2426)

MAGENTA: MILESTONE IN DYEING HISTORY. M. Schofield. Dyer 121: 853-855 (May 22, 1959). (2427)

The role of magenta in the history of the dyestuffs industry.

BEHAVIOR AND CONSUMPTION OF HYDROSULFITE IN VAT DYEING. S. Hafenrichter. Textil-Praxis 14, No. 2: 168-174 (1959). In German. Through BCIRA 39: 1835 (1959). (2428)

Factors affecting the consumption of reducing agent are reviewed, and it is shown that hydrosulfite-controlled dyeing (calculation of the quantities required in the initial bath and for subsequent additions so as to maintain a practically constant concentration) eliminates the formation of oxidation stains on the dyed material.

APPLICATION OF DYESTUFFS TO TEXTILES: A SELECTIVE LIST OF ITEMS AVAILABLE IN THE LIBRARY. Imp. Chem. Inds. Ltd, Dyestuffs Div. Library Dept., Blackley, Manchester, England. Sept. 1958. 11 p. Free. Reading list no. 11. (2429)

DEVELOPMENTS IN THE COLORING OF SYNTHETIC FIBERS. Textile Merc. 140: 793-796 (June 12, 1959). (2430)

The vat dyeing of Terylene (BP 795 392), the rapid dyeing of polyester fibers using organic solvents (BP 792 210), and the dyeing of wool/acrylic fibers in the presence of cationic surface active agents (BP 793 117) are discussed.

DYEING OF DRALON WITH ASTRAZON DYES. W. Beckmann. SVF Fachorgan Textilveredlung 14, No. 3: 130-137 (1959). In German. Through BCIRA 39: 2101 (1959). (2431)

During dyeing of acrylic fibers with basic dyes, the dye molecules are bound chemically to the acid groups at the chain end of the fiber molecule. The strength of this bond is the cause of the extremely high fastnesses of the resulting dyeings. Since the molecular dyeing strength is a measure of the maximum depth of color obtainable on acrylic fibers, dyes with the highest molecular dyeing strength must be chosen for deep shades and those with the lowest molecular dyeing strength for light fashion shades; owing to the larger number of molecules present, the latter are absorbed more slowly and uniformly. Cation-active retarders, e.g. Levegal PAN, act as regards dyeing rate similarly to basic dyes, by increasing the dye concentration determining the dyeing rate. The magnitude of its action, as well as the absorption rates of dyes in mixtures, can be calculated.

HIGH TEMPERATURE DYEING OF PIECE GOODS. F. Fourné. Textil-Praxis 14, No. 3: 289-294 (1959). In German. Through BCIRA 39: 2095 (1959). (2432)

Problems associated with high temperature dyeing of manmade fibers are reviewed, with special reference to the applicability of the pressure suspension star (for crepe and cloqué articles), the Barotor (for Terylene fabrics), the pressure jig (for pressure- and high-temperature dyeing of fabrics), and the pressure beam-dyeing equipment (for knitted and woven Dacron, Dacron/wool, nylon, Orlon and triacetate fabrics). The Thermosol process is also briefly mentioned. 26 refs.

CHANGES IN THE CHEMICAL, PHYSICAL, AND DYEING PROPERTIES OF VISCOSE FIBERS BROUGHT ABOUT BY THE ACTION OF WATER AND STEAM AT INCREASED TEMPERATURES. PART 1. E. Rexroth. Textil-Praxis 14, No. 3: 284-289 (1959). In German. Through BCIRA 39: 2096 (1959). (2433)

Processes in which viscose rayon yarn packages, cheeses, or spinning cakes are subjected to a steam or hot-water pretreatment to obtain a swelling-value reduction and, consequently, improved dyebath penetration and levelness, are reviewed, with special reference to the reduction in the absorbability for various vat dyes, the dependence of dye uptake upon the conditions of the steam or hot-water pretreatment, the effect of pretreatment on the leveling power of vat dyeings and on cheese dyeing in machines, and dyeing differences in hank- and cheese-dyeing caused by presteaming.

HIGH TEMPERATURE DYEING OF SYNTHETIC FIBERS. H. Stern. SVF Fachorgan Textilveredlung 14, No. 3: 122-129 (1959). In German. Through BCIRA 39: 2098 (1959). (2434)

Types of high temperature dyeing equipment (for loose material, hanks, and piece goods) are reviewed, with reference to the problems arising in dyeing synthetic fibers. Suitable dyeing methods are pointed out.

DYEING HYDROPHOBIC MANMADE FIBERS WITH NAPHTHOL AS PRODUCTS. R. Löwenfeld. Melliand Textilber. 40, No. 3: 295-300 (1959). In German. Through BCIRA 39: 2099 (1959). (2435)

Of the two methods available for dyeing these fibers (2-1/2-acetate, triacetate, polyester, polyacrylonitrile, polyamide, polyvinyl chloride), the Ofna-perl process is the most convenient because no diazotization on the fiber is necessary, since diazotized base components stabilized by triazine formation with secondary amines are used. The method, however, is not generally applicable. In the other method (modified azo method) use is made of a mixture of a Naphthol AS component with a free, nondiazotized fast base. Both methods are based on the Naphthol AS principle, i.e. formation on the fiber of insoluble dyes from two relatively small, soluble and diffusing components. This explains the high degree of levelness even on fibers which, owing to certain irregularities, tend to dye unevenly.

MODEL TEXTILE PLANTS: MODERN YARN DYEING PLANT. H. Röhrer. Spinner u. Weber 77, No. 5: 251-254 (1959). In German. Through BCIRA 39: 1832 (1959). (2436)

A description is given of the dyeing plant (building, machinery, pipe-line installation and transport means) erected by the largest South-German weaving mill of Weber & Ott AG in Forcheim.

PROCESSES DURING DYEING OF ACETATE FIBERS. A. Schaeffer. Melliand Textilber. 40, No. 1: 75-76 (1959). In German. Through BCIRA 39: 1840 (1959). (2437)

Dyeing of acetate fibers (acetate rayon or acetate spun rayon derived from cellulose 2-1/2-acetate or cellobiose pentacetate) with disperse, basic and acid dyes, and with bases which are diazotized on the fiber and coupled (developed) by means of a coupling component (e.g. phenol, naphthol, amine, etc.) is discussed.

MATT AND GLOSSY PRINTS BY MEANS OF RESINS. R. Merz. Spinner u. Weber 77, No. 5: 264-270 (1959). In German. Through BCIRA 39: 1849 (1959). (2438)

Production of matt prints on glossy fabrics, covering plastic matt prints on dark grounds, local glossy prints, and relief effects is discussed, and suitable compositions and directions for their application are given.

PRINTING OF ACETATE, POLYAMIDE, POLYESTER, AND POLYACRYLONITRILE FIBERS. PART 2. P. Weber. Textil-Praxis 14, No. 2: 174-180 (1959). In German. Through BCIRA 39: 1850 (1959). (2439)

In supplementation of a previous article (abstr. 1772/59), the author discusses methods of printing polyamide, polyacrylonitrile, and polyester fiber fabrics.

HAAS 3-BOWL PADDERS WITH AUTOMATIC LIQUOR CIRCULATION. F. Hagen (Friedrich Haas GmbH). Dyer 121: 963, 965 (June 5, 1959). (2440)

Schematic drawings are used to illustrate the 3-bowl padders based on new methods for achieving satisfactory liquor circulation. Photo, diagrs.

OPEN-WIDTH DYEING MACHINES. W. T. Swatek. Z. ges. Textil-Ind. 61, No. 7: 275-280 (1959). In German. Through BCIRA 39: 2091 (1959). (2441)

The author discusses the construction of Svetema dyeing machines (pad, pad-roll, pad-steam). New dyeing principles, on which the Williams and the Standfast dyeing machines are based, are briefly outlined.

CONTINUOUS VAT DYEING. H. Waibel. Dyer 121: 859-860 (May 22, 1959). (2442)

The development of the various continuous vat dyeing processes is discussed.

DYEING AND FINISHING OF HALF HOSE AND OTHER FOOTWEAR. A. Datyner. Soc. of Dyers & Colourists, Bradford, England. 1958. 23 p. $1.05. (2443)

RELATION BETWEEN MOLECULAR WEIGHT OF DYE AND DIFFUSION COEFFICIENT IN DYEING. K. Odajima (Toho Rayon Co. Ltd). (Letter to the editor). J. Soc. Dyers Colourists 75: 255 (May 1959). (2444)

DYEING PHENOMENA AND SHAPE OF MOLECULES. H. Zollinger. Textil-Rundschau 14, No. 3: 114-125 (1959). In German. Through BCIRA 39: 2090 (1959). (2445)

Examples are given to show the relationships between the shape of the molecules involved and the fastness of dyeings, substantivity of dyes, and the adsorption mechanism of reactive dyes. 29 refs.

TIPS ON PRINTING WITH METALLIC POWDERS. M. Mackay. Textile World 109: 73, 75 (June 1959). (2446)

WHITE AND COLORED DISCHARGE PRINTING ON POLYESTER FIBERS BY THE THERMOSOL PROCESS. G. Bertolina and A. Broggi. Melliand Textilber. 40, No. 3: 301-305 (1959). In German. Through BCIRA 39: 2106 (1959). (2447)

After a brief survey of the present state of printing technology, especially discharge printing on polyester fibers, a method is described that makes it possible to extend the Thermosol process to the production of white and colored discharge prints on these fibers. The method is based on the use of soluble zinc-formaldehyde sulfoxylate together with a suitable hydroxyl-containing compound and suitable carriers and, in the case of colored discharges, on the use of selected vat dyes.

POSSIBILITIES IN EMULSION PRINTING. T. L. Dawson (Imp. Chem. Inds. Ltd). Textile Mfr. 85: 225-226 (May 1959). (2448)

The comparative advantages of oil-in-water and water-in-oil emulsion printing pastes and their practical applications are described.

ENGRAVING TECHNIQUES FOR TEXTILE PRINTING. Melliand Textilber. (English ed.) 40, No. 2: 124, 126 (1959). (2449)

The various techniques used in roller engraving and their future potential are briefly summarized.

UNDERPLAITING STORAGE MECHANISM FOR BACK GREYS IN ROLLER PRINTING. R. Kauschka. Melliand Textilber. (English ed.) 40, No. 2: 120, 122 (1959). (2450)

The underplaiting mechanism described saves labor and increases production by ensuring undisturbed feed of the back greys, used for taking up excessive print paste in roller printing. Photos, diagr.

DYEING PROPERTIES OF SUBSTANCES USED FOR PRINTING PASTE THICKENERS. P. Vogel. Forschungsber. Wirtsch. u. Verkehrsmin. Nordrhein-Westfalen No. 496: 1-26 (1957). In German. Through BCIRA 39: 2103 (1959). (2451)

Dye equilibria were examined in relatively dilute thickener systems of potato starch, wheat starch, and Nafka Crystal Gum. In the concentration ranges of the Brilliant Benzoblue 6B dye examined, the isotherms (thickener: dye concentration of the liquor) were approximately linear at 60, 80, and 90° C. At the same dye concentration in the liquor, the thickeners take up about 1/10th to 1/100th of the dye which cellulose is able to absorb under the same conditions. At 60 and 80° C, wheat starch absorbs more dye than potato starch, whereas Nafka Crystal Gum is not able to take up any dye, and its addition is useful only on account of its ability to produce a certain viscosity.

JAPANESE SCREEN PRINTING MACHINE FOR BULK PRODUCTION. Toshin Kogyo Co. Ltd. Textile Recorder 77: 86 (June 1959). (2452)

The automatic screen printing machine described is capable of printing patterns with up to 21 distinct colors in design repeats from 18 in. to 48 in. Its features are described. Photos.

AUTOMATIC VAT PRINTING. Textile Inds. 123: 92-95 (June 1959). (2453)

The automatic screen printing and flash aging procedures used in producing vat prints at Stonehenge Processing Corp. are illustrated by photographs and diagrams.

CHROMIUM AND COPPER-PLATING OF ROULEAUX PRINTING ROLLERS. H. G. Jakob and V. Schmudlach. Melliand Textilber. 40, No. 1: 77-83 (1959). In German. Through BCIRA 39: 1847 (1959). (2454)

Chromium-plating of engraved calico-printing rollers, copper-plating of printing rollers, and purification of the waste waters are described.

AUTOMATIC SCREEN PRINTING MACHINE. Zimmer's Erben KG. Melliand Textilber. (English ed.) 40, No. 2: 118, 120 (1959). (2455)

Features and operation are briefly described. Photo.

ELECTROLYTIC HARD CHROMIUM-PLATING OF TEXTILE PRINTING ROLLERS. G. Monte. Melliand Textilber. 40, No. 2: 184-188 (1959). In German. Through BCIRA 39: 1846 (1959). (2456)

The main problems involved in hard chromium-plating of calico printing rollers are discussed, with special reference to three essential factors: the chromic-acid concentration, the current density to be calculated for the size of a given surface, and the temperature of the bath.

Mechanical processes D3

CARD WIRE RAISING MACHINE FOR KNITTED GOODS. Melliand Textilber. (English ed.) 40, No. 2: 126, 128 (1959). (2457)

The construction and applications of the machine are noted. Photo.

RASMA NAPPING ROLLER GRINDING MACHINE. M. Siegesmund. Textil-Praxis 14, No. 3: 294-296 (1959). In German. Through BCIRA 39: 2115 (1959). (2458)

A description is given of the construction and mechanism of the machine, which grinds a napping machine with 30 rollers and about 2,000 mm grinding width in only 90 min. It can be fitted on almost all types of napping machines.

TESTING AND MEASUREMENT E

MICROSCOPE AND TEXTILES. J. Jacquemart. Teintex 24, No. 3: 177-196 (1959). In French. Through BCIRA 39: 2133 (1959). (2459)

In this review, the author discusses the history of the microscope, and its use in the textile industry (morphological studies and identification of fibers, quality determination, study of fiber structure and of the effects of certain treatments, and detection of foreign substances). Special reference is made to techniques studied and used by the French Textile Institute. 24 refs.

TEXTILE TESTING AND QUALITY CONTROL: INSTRUMENTS AND METHODS. Man-Made Textiles 36: 49-79 (June 1959). (2460)

Testing the finished goods, by T. Fenn, p. 50-56; Commercial development of instruments, p. 58-64 (Exploitation of research results, by H. W. Griffith, p. 58-60, and Newmark: new name in textile instrumentation, by W. H. Howes, p. 60-64); Practical testipg procedure for woolen system spinning, by R. T. D. Richards, p. 65-69; Which warp size and how much?, by L. H. C. Tippett, p. 70-73; Instrumentation for improved quality, by W. T. Cowhig, p. 74-78; Miscellaneous instruments, p. 79.

WHY USE STATISTICAL METHODS. H. K. Weiss (Nat. Aniline Div.). Dyestuffs 42: 275-281 (Dec. 1958); 43: 26-35 (Mar. 1959). (2461)

Variance and regression analysis. Diagr, graphs, tables, 7 refs.

APPLICATIONS OF INFRARED SPECTROSCOPY TO CELLULOSE CHEMISTRY. F. Hurtubise (Industrial Cellulose Research Ltd). Can. Textile J. 76: 53-60 (June 12, 1959). (2462)

Review describing and illustrating some of the many and varied applications of infrared spectroscopy to cellulose research. Diagrs, graphs, 16 refs.

TESTING OF TEXTILES: DEFINITIONS FOR THE TENSILE TEST. German Standards Comm. Melliand Textilber. 40, No. 1: 24-25 (1959). In German. Through BCIRA 39: 1878 (1959). (2463)

The German draft specification DIN 53 815 gives definitions and derived values for the tractive force, elongation, and work performed, and enumerates standards for carrying out tensile tests on single fibers, yarns, and fabrics.

Fibers E1

IDENTIFICATION OF NYLON 6 AND NYLON 66. J. P. Ciaudelli. Industrial Test Lab., Philadelphia Naval Shipyard, Pa. July 1956. 10 p. Development report no. 2928. Order from Library of Congress, Photoduplication Serv., Washington 25, D. C. Microfilm $1.80, photostat $1.80. PB 137 544. (2464)

SENSITIVE COLORIMETRIC METHOD FOR DETERMINATION OF FRUCTOSE. L. E. Hessler (Texas Technological Coll.). Anal. Chem. 31: 1234-1236 (July 1959). (2465)

A rapid, direct method is needed for the determination of fructose in plant material in the presence of aldopentoses and aldohexoses. Several aromatic amines, notably p-anisidine and 3,3-dimethoxybenzidine, gave accurate, reproducible results when used with 85% phosphoric acid for determining fructose in the presence of glucose. The method gave low coefficients of variation on known quantities of fructose. Good reproducible results were found in determining fructose in the cotton boll in a range of 9 to 236 mg of fructose per gram of dry weight material. Graphs, tables, 5 refs.

THEORY OF MODERN PERMEABILITY MEASURING DEVICES FOR DETERMINING THE FINENESS OF TEXTILE FIBERS. THE HERTEL AREALOMETER. J. A. Serrano and L. Alvarez. Ingenieria Textil 25, No. 135: 461-466 (Nov./Dec. 1958). In Spanish. Through BCIRA 39: 1874 (1959). (2466)

The aerodynamic theory, on which modern devices for measuring fiber fineness are based, is discussed, and the Arealometer and its mechanism are described.

FRICTIONAL MEASUREMENTS ON FIBROUS MATERIALS. W. F. du Bois (Technological Lab. Nijverdal Koninklijke Textielfabrieken). Textile Research J. 29: 451-466 (June 1959). (2467)

A method for measuring the coefficient of static friction is described. Results obtained on various materials are given. A statistical analysis of the relationship between frictional force and normal load does not confirm the empirical equations given by other workers, but leads to a quadratic formula. Diagr, graphs, tables, 33 refs.

DEVELOPMENT AND CONSTRUCTION OF A FULLY AUTOMATIC CAPACITANCE TYPE FIBER LENGTH TESTER. W. Wegener and E. Haase-Deyerling. Forschungsber. Wirtsch. u. Verkehrsmin. Nordrhein-Westfalen No. 633: 1-32 (1958). In German. Through BCIRA 39: 2134 (1959). (2468)

The construction and mechanism of the staple diagraph developed by the authors for measuring fiber length in a high frequency condenser field are described. Comparative measurements were made on 16 different materials (single-fiber measurements, each on 1,000 fibers) using the staple diagraph and also the customary combed staple method. The results obtained by means of the staple diagraph can be regarded as being equal to those from the combed staple method, but they do not depend upon subjective factors and make it possible to determine the mean fiber length more rapidly.

STUDY OF NATURAL AND SYNTHETIC FIBERS. PART 1. APPARATUS FOR STUDYING THE MECHANICAL PROPERTIES OF NATURAL AND SYNTHETIC FIBERS. J. F. M. Oth. Kolloid Z. 162, No. 2: 118-123 (1959). In French. Through BCIRA 39: 1879 (1959). (2469)

The apparatus described makes it possible to examine the mechanical properties of very fine fibers. The stress is recorded by means of an electrical gage and a potentiometer. It is possible to record directly the stress-elongation curves at constant temperature, as well as time- and temperatures-dependent stress variations at constant length of the sample. The stress may also be maintained constant for studying the length variations in the sample as a function of temperature or time. The tests can be carried out on dry samples, or in the presence of a suitable liquid in excess. Under all these varying stress and temperature conditions, it is also possible to determine the diameter and birefringence of the samples.

IMPROVED INSTRUMENTATION AS AN AID TO SELECTION OF COTTON: PORT-AR VERSUS GRAVIMETRIC METHOD. J. K. Shah (Arvind Mills Ltd). Indian Textile J. 69: 382-387 (Apr. 1959). (2470)

Diagrs, graphs, tables, 24 refs.

Yarns E2

TWISTING AND SHRINKAGE OF TWISTED YARNS. J.-A. Colin. Industrie Textile: 99-107 (Feb. 1959). In French. Through BCIRA 39: 2047 (1959). (2471)

Formulas are given for calculating the twist and shrinkage of a given yarn, and reference is made to the effects of twist direction, cabling, and tension.

FINDINGS IN REGULARITY TESTING. J. Lünenschloss. Textil-Praxis 14, No. 3: 219-226 (1959). In German. Through BCIRA 39: 2148 (1959). (2472)

Devices for testing the regularity of slivers, rovings, yarns, and cords are reviewed, and the data obtained by means of modern regularity testers (cross-section diagram; mean irregularity or mean linear deviation and variation coefficient; length-variation curve) are discussed.

HOW MANY FIBERS PER YARN CROSS SECTION? S. D. George (Intern. Eng. Associates). Textile Inds. 123: 101-102 (June 1959). (2473)

A nomogram for computing the number of fibers per yarn cross section is given.

METHOD USED FOR DETERMINING WARP CRIMP. E. C. Kingsbery and N. P. Roddy (So. Utilization Research & Develop. Div.). (Letter to the editor). Textile Research J. 29: 521-522 (June 1959). (2474)

A device for determining the percent crimp of warp yarn in fabric is described. Photo, diagr, 1 ref.

Fabrics E3

ROTATION MIRROR APPARATUS FOR INSPECTION OF CLOTH RUNNING AT HIGH SPEED. S. Brunner. Melliand Textilber. (English ed.) 40, No. 2: 122, 124 (1959). (2475)

The principle on which the machine is based and its construction are described (Erhardt & Leimer OHG). Photo, diagr.

DURRANT JERSI-FAB TENSIONLESS FABRIC INSPECTION MACHINE. G. Durrant & Sons Ltd. Textile Merc. 140: 653 (May 15, 1959). (2476)

The Jersi-Fab machine is suitable for inspecting lace, net, manmade fiber fabrics, light film and plastic, and particularly jersey fabric. Its features are noted. Photo.

COMPARATIVE TESTS ON THE SCHOPPER ABRASION TESTER. J. Juilfs. Forschungsber. Wirtsch. u. Verkehrsmin. Nordrhein-Westfalen No. 500: 1-59 (1958). In German. Through BCIRA 39: 2158 (1959). (2477)

In order to examine the accuracy and reproducibility of the abrasion values given by the Schopper tester, comparative tests were made in 9 laboratories under identical testing conditions. The results (tabulated and in diagrams) show that the number of abrasion cycles at hole formation is not a very reliable value, that the values based on a constant number of cycles have an accuracy of $\pm 15\%$, and that the abrasion curves for abrasion, bursting pressure, etc, show a characteristic course.

APPARATUS FOR TESTING FABRIC STRENGTH. W Wegener. Reyon Zellwolle Chemiefasern No. 2: 97-99 (1959). In German. Rayonne et Fibres Synthet. 15, No. 3: 277-282 (1959). In French. Through BCIRA 39: 2156 (1959). (2478)

The apparatus described registers automatically the time/stress curves at a predetermined elongation, and also makes it possible to record the time/elongation curves of the preceding stress period, and to determine the time/residual elongation relationship after relaxation. It is possible to carry out dynamic tests by repeating the stress and relaxation process as often as desired. The tensile stress may also be applied by means of a synchronized motor (according to the principle of constant elongation), or by means of a hand wheel. The testing width and length of the fabric may be varied. The maximum load specified is 100 kg.

EVALUATION OF FABRIC STRENGTH IN THE CASE OF WASH-AND-WEAR FINISHES. F. Nestelberger. Textil-Rundschau 14, No. 3: 126-129 (1959). In German. Through BCIRA 39: 2157 (1959). (2479)

Methods for testing the strength of wash-and-wear fabrics are discussed, with special reference to the use of the Elmendorf tear tester, which was originally developed for testing paper. The test is described in detail, and practical examples are given to show the differences of tensile and tearing strength in various fabrics with different finishes.

TEMPERATURE AND HUMIDITY DETERMINATION IN CLOTHING BY MEANS OF THE POCKET THERMO-HYGROGRAPH. K.-H. Richter. Faserforsch. u. Textiltech. 10, No. 2: 84-86 (1959). In German. Through BCIRA 39: 2154 (1959). (2480)

The device described consists of a light metal, watch-like casing with a clockwork built in so that a writing disc for the diagram paper can be arranged on the hour hand axis. The casing has numerous holes through which the air has access to the measuring elements. The device measures not only large differences in temperature and relative humidity on various parts of the body, but also differences between skin conditions and a middle layer of the clothing. It is also possible to determine the effect of various factors (material, its thickness, weave, type of fiber, type of clothing) on the temperature and relative humidity.

TESTING METHOD FOR DETERMINING THE RESISTANCE TO PRESSURE OF SHORT NAP PILE FABRICS. W. Stockhausen. Melliand Textilber. 40, No. 3: 308-310 (1959). In German. Through BCIRA 39: 2153 (1959). (2481)

The method described consists in weighting a strip of the fabric to be tested with a certain weight for a predetermined time. After removal of the stress, the specially constructed apparatus is used to measure the angle formed between the pile threads and the ground fabric. The method has been used in a finishing plant for a long time, and the results were in agreement with practical wear tests and the consumers' views.

TWO CASES OF DAMAGE TO WOOLEN GOODS. N. Bigler. Ciba Rev. 11, No. 130: 33-36 (Jan. 1959). (2482)

Case 1. Alkali damage to a woolen pullover from rubbing stains with a concentrated bleaching soda prior to drycleaning. Case 2. White stains on blue wool/nylon stockings which had had a Melafix antifelting treatment and had been damaged by acid during the treatment. Photomicrographs.

QUANTITATIVE ANALYSIS OF FELTS WITH ADMIXTURES OF CELLULOSE AND CASEIN FIBERS. K. Korthum and M. Asbrand. Melliand Textilber. 40, No. 2: 193-196 (1959). In German. Through BCIRA 39: 1909 (1959). (2483)

Methods of separating casein fibers from wool, and viscose rayon staple from wool and casein fibers are briefly reviewed, and a method for the quantitative determination in technical felts of viscose rayon staple, wool, and casein is described. Reference is also made to the determination of the loss factor in the case of the potassium hydroxide/hypochlorite and trypsin methods, respectively.

TESTING THE ABRASION RESISTANCE OF WOVEN AND KNITTED FABRICS. TEST FABRIC FOR THE ABRASION WITH BRUSHES. Swiss Standards Assoc. Textil-Rundschau 14, No. 2: 83-85 (1959). In German. Through BCIRA 39: 1905 (1959). (2484)

The Swiss specification SNV 98 533 defines the test fabric (basic and standard) to be used, the manner of sampling, and the methods for determining the abrasion resistance of the test fabric.

TECHNIQUE FOR EXAMINING THE CONFIGURATION OF FIBERS IN PLEATED FABRICS. H. W. Holdaway and V. Laws (Wool Textile Research Labs., CSIRO). Textile Research J. 29: 496-499 (June 1959). (2485)

This paper describes embedding and sectioning techniques developed to examine the mechanical deformation in bending of single fibers near a pleat in wool fabrics and illustrates their application to the examination of the effects of pleating and washing procedures. Photomicrographs, photos, table, 5 refs.

SOME OBSERVATIONS ON DISTORTIONS AT A WRINKLE. M. J. Coplan and S. J. Golub (Fabric Research Labs.). Textile Research J. 29: 500-504 (June 1959). (2486)

The procedure and embedding media used for analyzing fabric, yarn, and fiber distortion in wrinkled or creased fabric are described, and some preliminary data reported. Photomicrographs, table.

Other E4

ZEISS ELREPHO PHOTOMETER FOR COLOR MEASUREMENT. Dyer 121: 959, 961 (June 5, 1959). (2487)

The Elrepho measures the directional reflectance of diffusely reflecting materials in particular regions of the visible spectrum, separated by tristimulus filters, so that the color of samples can be characterized. The basic construction of the instrument and its application to the measurement of color in hosiery are described. Photo, diagr.

SYMPOSIUM ON ANALYTICAL METHODS FOR SURFACTANTS. Chemical Specialties Manufacturers Assoc., Inc., 50 East 41st St., New York 17, N. Y. 1958. 17 p. (2488)

Analysis of alkylbenzene sulfonates, by E. W. Blank, p. 2-5; Analysis of alkyl sulfates, by R. C. Stillman, p. 6-11; Analysis of high amide fatty alkanolamides, by S. M. Livengood and C. A. Johnson, p. 11-14; Analysis of nonionic surface active agents, by S. Siggia, p. 14-17. References.

MICROSCOPIC STUDY OF EXPANDABLE POLYSTYRENE BEAD, PREPUFF, AND FOAM. R. Giuffria. Modern Plastics 36: 150, 152 (June 1959). (2489)

The morphology of expandable polystyrene bead, prepuff, and foam was studied microscopically. As a result of this study, a technique for producing thin cross sections of expanded bead foam was developed. Photomicrographs.

SPECTROSCOPIC TECHNIQUES FOR IDENTIFICATION OF ORGANOSILICON COMPOUNDS. A. L. Smith and J. A. McHard (Dow Corning Corp.). Anal. Chem. 31: 1174-1179 (July 1959). (2490)

Silicones may be identified with the aid of chemical and physical tests, but in many cases, simple spectroscopic examination, particularly by infrared, will satisfactorily characterize the material with a minimum of time and effort. Techniques for examining both organosilicon monomers and polymers are discussed. Some infrared spectra of typical chlorosilanes and silicone polymers are shown, and the spectra are interpreted in terms of group frequencies. The applicability of ultraviolet, mass, Raman, emission, and nuclear magnetic resonance spectroscopy to identification of silicones is reviewed. Graphs. 58 refs.

LIGHT CONDITIONS AND COLOR MATCHING. R. Hünlich. Spinner u. Weber 77, No. 5: 262-263 (1959). In German. Through BCIRA 39: 1908 (1959). (2491)

The requirements to be satisfied by an artificial light source, and the advantages of light sources giving a light quality similar to daylight, but independent of weather conditions and seasonal variations, are discussed, with special reference to the Osram Xenon high pressure lamp XBO 162, to be used in conjunction with the Siemens color tester CL 10.

APPARATUS FOR DETERMINING SOLUBILITY. F. Mindermann and A. Franz. Melliand Textilber. 40, No. 2: 192-193 (1959). In German. Through BCIRA 39: 1911 (1959). (2492)

A new apparatus is described, by means of which it is possible to obtain accurate and reproducible solubility values. The apparatus can be used in controlling the water-solubility of dyes during their manufacture or examining that of new products. Standard testing conditions are proposed.

MILL MANAGEMENT F

MANAGEMENT PROBLEMS IN THE WOOL TEXTILE INDUSTRY. PART 6. BROKING PROFIT PROBLEMS AND PROCEDURES. C. D. Hardaker (Urwick, Orr & Partners Ltd). Fibres 20: 209-212 (June 1959). (2493)

The author explains in broad terms the principles of determining broking profits, indicating how these principles can be applied in the worsted spinning industry, and deals with the problems of segregating broking profit from conversion profit. Table.

RE-EQUIPMENT PLANNING. Textile Weekly 59(1): 1283-1322, 1340 (May 22, 1959). (2494)

This special feature, covering various aspects of mill reorganization, is intended as a guide to management in relation to the British government's White Paper on reorganization of Lancashire cotton industry. It includes the following: Part 1. Analysis of the White Paper, p. 1283-1284, 1340; Part 2. Factors in re-equipment: basic principles and practical considerations, p. 1287-1295; Part 3. Machinery for textiles: Textile Institute 1959 Conference papers, p. 1296-1319; Part 4. Productivity in the cotton industry, by A. Ormerod, p. 1321-1322.

PROCESSING CUSTOMERS' ORDERS BY CHART METHOD. F. H. Drewes. Textile Mfr. 85: 211 (May 1959). (2495)

The use of the Schlink progress chart for the processing of customers' orders and the purchase of raw materials necessary to expedite customers' orders is outlined.

Industrial engineering F1

CONSIDERING MARKET RESEARCH? L. Liang (Werner Textile Consultants). Textile Inds. 123: 115-116 (June 1959). (2496)

The factors to be considered in organizing an effective marketing research department for a textile mill are reviewed.

MANAGEMENT PROBLEMS IN THE WOOL TEXTILE INDUSTRY. PART 7. MANAGEMENT INFORMATION AND DATA. J. D. Gould (Urwick, Orr & Partners Ltd). Fibres 20: 249-252 (July 1959). (2497)

The principles of management data, designed to present to management the information needed to control the operations of a company from the statistical aspects of broking, the conversion of materials, the use of plant and labor, to the selling and administrative aspects, are presented. Diagrs.

COMPUTER USE IN TEXTILE MILLS. R. B. Baggett (Job White & Sons Ltd). Textile Merc. 140: 716, 719 (May 29, 1959). (2498)

Details of experience in preparing and operating a computer program for production planning are described. It is pointed out that by cooperation within the textile industry, it would be possible for small mills to take advantage of computer use economically.

CENTRAL PRODUCTION CONTROL IN SPINNING AND WEAVING. D. Brunnschweiler. Textile Merc. 140: 740-742, 754 (June 5, 1959). (2499)

An installation of the Hasler central production control system, at the French mill Filatures et Tissages de Wittenheim, is examined.

LABOR COST CONTROL REPORT. M. Havinoviski. Textile Inds. 123: 125-127 (June 1959). (2500)

The report described and illustrated shows, in terms of dollars and cents gained or lost, the efficiency of every activity in a department. Cost analysis of each activity in a department shows where trouble lies and, indirectly, what action is to be taken.

SIGNIFICANCE TESTING IN MILL EXPERIMENTATION. N. L. Enrick and S. C. Lawrence (Inst. Textile Technol.). Modern Textiles Mag. 40: 36, 48-49 (June 1959). (2501)

The use of the F-test for evaluating the statistical significance of differences in test averages and variability of product obtained from experimental mill tests is explained. Tables, 6 refs.

MOTIVATIONAL APPROACH TO SAFETY. J. E. Gardner (Fieldcrest Mills). Textile World 109: 105, 160, 162 (June 1959). (2502)

The most common motivational techniques and their limitations in the promotion of safety are examined.

INCENTIVE APPLICATIONS IN THE FINISHING PLANT. T. R. Williams (Riegel Textile Corp.). Textile Bull. 85: 75-77 (May 1959). (2503)

The mechanics of a wage incentive system used by a finishing plant are outlined.

Plant and equipment F2

ACQUIRING MODERN FACILITIES. PART 1. HOW AN OLD COTTON MILL WAS MODERNIZED. H. M. Rogers. Textile Bull. 85: 73-75 (May 1959). (2504)

A major modernization program carried out recently at a Southern cotton mill engaged in the manufacture and finishing of denims is described.

PROPER FINISHING PLANT VENTILATION. H. W. Frederick (J. E. Sirrine Co.). Textile Bull. 85: 78-82 (May 1959). (2505)

The most effective conditions for removing excess water vapor and high heat from finishing plants are discussed.

FUEL EFFICIENCY IN THE JUTE INDUSTRY. Fibres 20: 190-192 (June 1959). (2506)

This article summarizes a survey carried out by the National Industrial Fuel Efficiency Service, in conjunction with the British Jute Research Association, to determine possible methods of improving fuel efficiency in the jute industry. The survey investigated the average efficiency of boiler plants, power plants, process machinery, and space heating and humidifying systems, and found that the 6 mills selected for the survey were wasting over 6,000 tons of fuel per year. Graphs, table.

PROCEEDINGS OF THE 1959 CONFERENCE ON ELECTRICAL APPLICATION FOR THE TEXTILE INDUSTRY, APRIL 2-3, 1959. Am. Inst. Electrical Engineers, Atlanta, Ga. 1959. (2507)

Inspection lighting for textile manufacturing, by W. Allphin; Disease called power factor and how capacitors can profitably cure this disease, by H. J. Forbes, Sr.; A practical understanding of semiconductors, by G. Strull; Application of semiconductor drives in textile industry, by C. D. Beck; The electrical engineer's role in the plant's accident prevention program, by G. Booker; How to secure optimum performance of your commutators and brushes, by D. R. Dobson; How you can decrease down time on dc adjustable speed drives by systematic trouble shooting, by C. D. Wright.

AIR CONDITIONING PLANTS IN BAST FIBER SPINNING. T. Jaeggle. Melliand Textilber. (English ed.) 40, No. 2: 76-80 (1959). (2508)

Photos.

TRENDS IN FINISHING PLANT VENTILATION. H. W. Frederick (J. E. Sirrine Co.). Am. Textile Reptr. 73: 21-22, 49-50 (June 11, 1959). (2509)

Installations and procedures for water vapor and heat removal and control are discussed in this summary of a speech presented at a textile engineering conference of the Am. Soc. of Mechanical Engineers.

POINTERS ON CUTTING FUEL WASTE. G. Gould (Fuel Eng. Co.). Modern Textiles Mag. 40: 52, 87 (June 1959). (2510)

POINTERS ON GEAR CHECKING AND MAINTENANCE. L. H. Morrison (Medley Mfg. Co.). Textile Inds. 123: 117-118 (June 1959). (2511)

PLANNED LUBRICATION AS MAINTENANCE FUNCTION. J. H. Fuller (E. I. du Pont de Nemours & Co.). Am. Textile Reptr. 73: 31, 33, 63 (May 21, 1959). (2512)

A four-point program found to be most effective in establishing proper lubrication practices consists in: (1) establishing lubrication schedules; (2) organizing and training personnel; (3) controlling variety, distribution, and quantity of lubricants; and (4) replacing or redesigning to minimize lubrication. Procedures for developing the program are outlined. Photos.

SCIENCES G

Chemistry G1

STUDY OF THE SORPTION OF FORMALDEHYDE FROM AQUEOUS SOLUTION BY CELLULOSE. W. J. Roff (Shirley Inst.). J. Textile Inst. 50: T353-T372 (May 1959). (2513)

The concentration of an aqueous solution of formaldehyde has been found to diminish after introduction of cellulose and the lowering is attributed to preferential sorption. The influence of various factors on both the rate of absorption and the amount finally absorbed is discussed. The system is compared with the uptake of direct dyes by cellulose, and a theory is advanced that the sorption of formaldehyde depends on a diffusion process and ultimately on chemical substitution of accessible hydroxyl groups by hemiacetal groups, i.e., formation of methylolcelluloses. Diagr, graphs, tables, 27 refs.

STUDIES ON THE BIOSYNTHESIS AND FRAGMENTATION OF C^{14}-LABELED COTTON CELLULOSE AND SEED OIL. M. L. Wolfrom, J. M. Webber, and F. Shafizadeh. J. Am. Chem. Soc. 81, No. 5: 1217-1221 (1959). Summary in BCIRA 39: 1766 (1959). (2514)

SOLUBILIZING PROPERTIES OF THE PROTEIN-DETERGENT COMPLEX. I. Blei (Lever Bros. Research Center). (Letter to the editor). J. Colloid Sci. 14: 358-361 (June 1959). (2515)

The purpose of this report is to present the results of a preliminary investigation of the properties of the protein-detergent complex as a solubilizing agent in concentrations of alkyl sulfates in which no solubilization of oil-soluble dyes occurs, in the absence of protein. Graph, 9 refs.

CELLULOSE AND FORMALDEHYDE. J. T. Marsh (Tootal Broadhurst Lee Co. Ltd). J. Soc. Dyers Colourists 75: 244-252 (May 1959). (2516)

The reaction between cellulose and formaldehyde is of great theoretical interest in connection with the chemistry of cellulose and the mechanism of certain finishing effects. One type of reaction with cellulose in the swollen state gives a product with "wet but not dry" recovery from creasing, while another type of reaction with the collapsed fiber gives a damaged product with high crease recovery and low water-imbibition. The results accord generally with the proportions of regions of poor lateral order in cotton and rayon, and bear some relation to similar effects produced by resinous condensation products. The effect of the process on the breaking loads of cotton and rayon presents some anomalies, which are discussed together with the controversial matter of water-imbibition and covalent cross-linkages. Graphs, tables, 33 refs.

VISCOSITY-TEMPERATURE RELATIONSHIPS FOR DILUTE SOLUTIONS OF CELLULOSE DERIVATIVES. PART 2. INTRINSIC VISCOSITIES OF ETHYL CELLULOSE. W. R. Moore and A. M. Brown (Inst. of Technol., Bradford). J. Colloid Sci. 14: 343-353 (June 1959). (2517)

Temperature variations of intrinsic viscosities and some other viscosity parameters for ethyl cellulose fractions in representative solvents are considered in terms of some current hydrodynamic and thermodynamic treatments of the viscosities of dilute polymer solutions. Graphs, tables, 26 refs.

CRYSTALLINE MODIFICATIONS OF CELLULOSE. PART 2. A STUDY WITH PLANE-POLARIZED INFRARED RADIATION. J. Mann and H. J. Marrinan (Brit. Rayon Research Assoc.). J. Polymer Sci. 32: 357-370 (Nov. 1958). (2518)

Graphs, 10 refs.

CRYSTALLINE MODIFICATIONS OF CELLULOSE. PART 3. THE DERIVATION AND PRELIMINARY STUDY OF POSSIBLE CRYSTAL STRUCTURES. D. W. Jones (Brit. Rayon Research Assoc.). J. Polymer Sci. 32: 371-394 (Nov. 1958). (2519)

Photo, graph, tables, 25 refs.

STRAIN DEPENDENCE OF STRESS RELAXATION IN CELLULOSE MONOFILAMENTS. E. Passaglia and H. P. Koppehele (Am. Viscose Corp.). J. Polymer Sci. 33: 281-289 (Dec. 1958). (2520)

The stress relaxation behavior of isotropic and oriented cellulose filaments was studied at 25° and 50° C and 50% relative humidity at strains between 0.5 and 5%. Graphs, 14 refs.

NITROZATION OF NYLON. M. R. Porter (Brit. Nylon Spinners Ltd). J. Polymer Sci. 33: 447-455 (Dec. 1958). Through Chem. Abstr. 53: 4746b (1959). (2521)

Heterogeneous nitrozation of nylon yarn is rapid. By heating the nitrozated polyamides, nitrogen is evolved and polyesters are formed. Caustic alkali reacts rapidly with nitrozated nylon. Graphs, tables, 15 refs.

MECHANISM OF DETERGENCE. A. S. C. Lawrence (Univ. of Sheffield). Nature 183: 1491-1494 (May 30, 1959). (2522)

The mechanism postulated suggests that detergence is not brought about by free surface energy phenomena but by cryoscopic forces only. Ternary eutectic formation is by the water and the two water-soluble groups; the liquid crystalline properties result from the close-packing of the water-insoluble hydrocarbon "tails" attached to the polar groups of soap and fatty soil. Photomicrographs, diagrs, graphs, 9 refs.

LIVING POLYMERS: THEIR PREPARATION AND APPLICATION. J. H. S. Green. Research 12: 232-237 (June 1959). (2523)

New processes of polymerization are described, in which the initiation and termination reactions are controlled. Under these conditions the molecular weight and the sharp molecular weight distribution of the polymer are controllable. The use of these polymers and block copolymers is proposed for a systematic investigation of the physical properties important in practical applications. Graphs, tables, 15 refs.

LOOM AND RING TRAVELER LUBRICANTS REMOVABLE BY WASHING. PART 1. H. Hendrix. Melliand Textilber. 40, No. 2: 169-174 (1959). In German. Through BCIRA 39: 1916 (1959). (2524)

Various raw materials and the chemical nature of loom oils are discussed and some of the products are examined for their removability from textiles by washing. Since no generally applicable washing directions can be given, it is suggested that loom-oil manufacturers should recommend in each case the detergent group and the special washing conditions applicable to a given oil. The data given in this paper refer solely to pure oil stains containing no dirt.

ADSORPTION OF LABELED SODIUM CARBOXYMETHYL CELLULOSE BY TEXTILE FIBERS. J. W. Hensley and C. G. Inks (Wyandotte Chem. Corp.). Textile Research J. 29: 505-513 (June 1959). (2525)

A carbon-14-labeled sodium carboxymethyl cellulose (CMC) was employed to measure its adsorption by textile fibers, and, in the case of cotton, to investigate the relationship between adsorption and detergency action. Adsorption of CMC by cotton was found to depend on the presence of excess cations in solution, increasing with cation concentration and valence. Equilibrium adsorption of CMC in the presence of excess cations was found to have a zero temperature coefficient. Variation of pH within the alkaline range had no significant effect. Limited measurements with fibers other than cotton indicated little or no adsorption by wool, Orlon, or acetate (in the presence of excess cations). There was significant adsorption by nylon and rayon, but this adsorption was greatly reduced by addition of an alkylaryl sulfonate. Detergency evaluations with the labeled CMC and with unlabeled material indicate that CMC adsorbed on cotton has a significant action in preventing redeposition of particulate soil materials. The adsorption and detergency data indicate that the quantity of CMC required to form a monomolecular layer on cotton fibers may be on the order of 400-500 micrograms per gram of cotton. Graphs, tables, 24 refs.

STRUCTURE OF THE LIQUID-CRYSTAL PHASES OF SOME SOAP + WATER SYSTEMS. V. Luzzati, H. Mustacchi, and A. Skoulios (Centre de Recherches sur les Macromolécules). Discussions Faraday Soc. No. 25: 43-50 (1958). (2526)

X-ray diffraction studies were made of the mesomorphic phases of some soap + water systems. The soaps used were the laurate, myristate, palmitate and stearate of sodium and of potassium. The phase diagram was investigated over the whole range of concentration and for temperatures up to 110° C. Diagrs, graphs, 6 refs.

EPOXY RESINS. I. Skeist and G. R. Somerville. Reinhold Pub. Corp., N. Y. 1958. 293 p. $4.95. (2527)

Contents: Epoxy story; resin intermediates; curing the liquid epoxy; flexibilizing modifiers for epoxy resins; reinforcements, fillers, thixotropic agents, colorants; handling epoxies; tooling for metal-working; miscellaneous structural epoxies; electrical embedments; adhesives, caulking, and patching; properties and applications of epoxy resins in surface coatings; new developments in epoxies. Bibliography, p. 263-282.

SOLUBILITY IN SOAP SOLUTIONS. A. S. C. Lawrence (Sheffield Univ.). Discussions Faraday Soc. No. 25: 51-58 (1958). (2528)

The structural features described are discussed in terms of interaction between the ionized group in a soap and the polar group of the organic compound in the presence of water; as partial miscibility in a 3-component system; and as a balance between the resultant enhanced solubility and the opposing insolubility of the hydrocarbon chains. Diagrs, graphs, 9 refs.

MISCELLANY H

1959 KNITTING ARTS EXHIBITION. Textile World 109: 47-48, 162 (June 1959). Modern Textiles Mag. 40: 39-42, 69-72 (June 1959). (2529)

PROBLEMS OF PRODUCTIVITY IN THE COTTON TEXTILE INDUSTRY. A. Ormerod. Textile Merc. 140: 648-650 (May 15, 1959). (2530)

Part 3. Lancashire's shortage of managerial and technical personnel. For parts 1 and 2 see abstr. 2153/59.

MANUAL OF TEXTILE INDUSTRY OF CANADA 1959. Canadian Textile Journal Pub. Co. Ltd, 223 Victoria Ave., Westmount, Montreal 6, Quebec. 1959. 338 p. (2531)

Contains articles on the technology and economics of the Canadian textile industry, machinery developments, and textile research. A buyers' guide section, mill directory, and a textile technical and trade association directory are also included.

PLANNING FACILITIES FOR INDUSTRIAL RESEARCH. W. H. Pritchard (Courtaulds Ltd). Fibres 20: 246-248, 254 (July 1959). (2532)

The author outlines the demands of a new research laboratory and briefly explains methods of construction, the distribution of laboratory services, and the general basis of design. Photos, diagr, 1 ref.

PATENT CHECKLIST

U.S. patents may be obtained from the U.S. Patent Office, Washington, 25, D.C., for 25¢ a copy. Photostatic copies of foreign patents are also available. Charges for these photostats are based on the number of pages in the patent.

YARN PRODUCTION B

CRIMPING MACHINE. F. Scragg and P. Forward (to S. & E. Scragg Ltd). BP 809 945, Mar. 4, 1959. Through BCIRA 39: 1800 (1959). (2533)

Relates essentially to a crimping unit, including heating and false twist devices, that can be mounted on a fixed vertical column on a standard uptwister. Movement of the false twisting spindle in the appropriate direction in relation to the column disengages the spindle from the driving belt, that presses against all the spindles, and stops the yarn feeding mechanism.

SPINDLE MOUNTING ON FALSE TWIST CRIMPING MACHINE. S. Scragg and C. D. McWhinnie (to S. & E. Scragg Ltd). BP 809 946, Mar. 4, 1959. Through BCIRA 39: 1801 (1959). (2534)

The false twist spindle of the unit for crimping yarn on an uptwister is mounted at each end in antifriction bearings located in housings that are held in place in their seatings by spring clips.

CRIMPING THERMOPLASTIC YARNS. E. P. R. Scragg and A. Dobson (to E. Scragg & Sons Ltd). BP 810 236 Mar. 11, 1959. Through BCIRA 39: 1802 (1959). (2535)

Thermoplastic yarns are drawn through a heater and then into a false-twist tube where they twist together and the deformations are set. As the bundle proceeds out of the tube it is separated by passing a transverse pin, and the individual ends are then wound into packages.

TRAVELING CLEANER FOR TEXTILE MACHINES. A. H. Bahnson, Jr. USP 2 886 843, May 19, 1959. (2536)

The blower units are suspended from a self-propelled carriage in such a way that any obstruction in the path of the units causes the carriage to stop moving.

TOW FEEDING AND COLLECTING DEVICE. S. G. Hawtin and D. W. Groombridge (to Brit. Celanese Ltd). USP 2 889 034, June 2, 1959. (2537)

The device consists of a driven, cylindrical wheel that has 10-20 pegs reaching out from the periphery at one side. The "yarn" makes a few laps around the wheel and is then transferred to the pegs before dropping off into the can, e.g. a sliver can.

DRAFTING ROLLS. SKF Kugellagerfabriken GmbH. BP 810 645, Mar. 18, 1959. Through BCIRA 39: 2050 (1959). (2538)

For preventing fluff from penetrating the bearings of a drafting roller and the escape of lubricant, a sealing ring is used, comprising three annuli and Y-shaped in cross-section. One annulus is mounted on the roller body, another is tapered towards the stationary shaft with which it is in circular contact, and the third comprises a resilient, segmented bead that rests in a recessed member that rotates with the roller.

TOP DRAFTING ROLL WEIGHTING. K. Scholfield (to T. M. M. (Research) Ltd). BP 810 967, Mar. 25, 1959. Through BCIRA 39: 2051 (1959). (2539)

In a drafting system in which the top rolls are carried on a common roller arm, pivoted at one end so that the rolls may be swung upwards out of action, a sprag is pivoted to the arm, so that it can engage with a fixed stop to hold the arm in the raised position when required.

COMBINED ROVING BREAK-BACK AND FEED MECHANISM FOR DRAFTING. A. H. Bahnson, Jr. USP 2 886 941, May 19, 1959. (2540)

Mechanism for breaking back roving at a point prior to its entry into the drafting rolls if a break occurs at the exit side of the rolls also makes provision for feeding the broken roving back into the drafting rolls.

APPARATUS FOR CUTTING STAPLE FIBERS FROM POLYAMIDE FILAMENTS. R. L. Keefe, Jr. (to E. I. du Pont de Nemours & Co.). USP 2 887 155, May 19, 1959. (2541)

Opening, picking, fiber preparation B1

FIBER BLENDING MACHINES. W. F. Leineweber, Jr. (to James Hunter Inc.). USP 2 885 741, May 12, 1959. (2542)

Battery of fiber feeding and weighing machines for automatically and continuously weighing small increments of different fiber types and delivering them to a common holding chamber where they are sandwiched into a single package ready for delivery to a blender.

Carding and combing B2

UNIVERSAL CARD GRINDING MACHINE. A. M. A. Freitag (to Soc. Commandite Actions Spa). USP 2 885 837, May 12, 1959. (2543)

Machine suitable for both the truing or grinding of cylinders and for sharpening their linings.

Drawing and roving B3

CREEL FOR TEXTILE MACHINE. J. H. Selby (to Warner & Swasey Co.). USP 2 885 742, May 12, 1959. (2544)

Photoelectric stop motion for a creel feeding a single or double bank of slivers to a gill box.

APPARATUS FOR INSERTING TWIST INTO A TWISTLESS SLIVER AS IT IS FED INTO A DRAFTING HEAD FOR TWISTED SLIVERS. R. Wilks (to Wool Inds. Research Assoc.). USP 2 886 939, May 19, 1959. (2545)

Spinning, winding, twisting B4

CRADLE FOR TOP ROLLS OF DOUBLE APRON DRAFTING ARRANGEMENTS FOR SPINNING. J. J. Rieter & Cie AG. BP 810 269, Mar. 11, 1959. Through BCIRA 39: 1799 (1959). (2546)

Extending laterally from the apron reversal bar are two brackets that rest on the axle connecting the two top rollers. Each bracket forms a bearing for a top roller axle, the bearing comprising a pair of opposed plane surfaces arranged at an angle less than 90° and parallel to the line of contact of the aprons with the reversal bar. This bar remains accurately parallel to the axis of the top roller pair and the aprons run truly.

RING SPINNING MACHINE COP-BUILDING MOTION. W. Butterworth (to Fethney Bros. Ltd). BP 810 495, Mar. 18, 1959. Through BCIRA 39: 2053 (1959). (2547)

The invention relates to the building of cops for unwinding at high speed onto winding machines.

RING SPINNING AND DOUBLING FRAMES. E. Hamel. BP 810 615, Mar. 18, 1959. Through BCIRA 39: 2052 (1959). (2548)

To guide spindle or ring rails on double-sided frames as they rise and fall, each rail is connected by transverse bars to one or two longitudinal bars to form two separate frames, each of which is provided at its ends and rail side with guide rollers that engage vertical guide rails.

UPTWISTER SPINDLE MOUNTING FOR SUPPRESSING VIBRATION. G. W. Rushton. BP 810 779, Mar. 25, 1959. Summary in BCIRA 39: 2056 (1959). (2549)

TIRE CORD PLYING AND TWISTING APPARATUS. A. S. Tingas (to Celanese Corp.). USP 2 882 675, Apr. 21, 1959. (2550)

SETTING DRAFTING ROLLS IN SPINNING MACHINES. E. C. Thompson and E. T. Jagger (to George Angus & Co. Ltd). USP 2 885 740, May 12, 1959. (2551)

Frame for determining the correct roller setting for any roving without having to experimentally adjust the distance between long lines of drafting rolls.

VARIABLE SPEED DRIVE FOR SPINNING FRAME. G. Malcom and M. Behrman (to Reliance Elec. & Eng. Co.). USP 2 885 898, May 12, 1959. (2552)

APPARATUS FOR AUTOMATICALLY MOUNTING AND DISMOUNTING BOBBINS ON RING SPINNING AND TWISTING MACHINES. Y. Urano and S. Hamahata (to Kanegafuchi Spinning Co. Ltd). USP 2 886 940, May 19, 1959. (2553)

BOBBIN WINDING MACHINE. C. F. Fitzgerald (to United Shoe Machy. Corp.). USP 2 889 120, June 2, 1959. (2554)

In a machine for winding bobbins of different lengths, a single cutting knife operating in a fixed plane and a bobbin advancing mechanism for automatically bringing one end of each bobbin length into the plane of the knife.

Yarns B5

APPARATUS FOR PRODUCING BULK YARN. W. I. Head (to Eastman Kodak Co.). USP 2 884 756, May 5, 1959. (2555)

Continuous filament yarn, under low tension, is drawn through a passage of varying diameter in an air jet device to form small, randomly spaced loops.

PRODUCING STAPLELIKE GLASS FIBER YARN FROM CONTINUOUS STRANDS. P. J. Frickert and R. G. Russell (to Owens-Corning Fiberglas Corp.). USP 2 886 877, May 19, 1959. (2556)

The strand is formed into loops and the loops are then elongated and oriented into a compact form similar to a staple yarn.

ELASTIC BOOT LACE. R. Fromm (to W & R Fromm Corp.). USP 2 887 005, May 19, 1959. (2557)

The lace is composed of a core of longitudinal elastic strands covered by a longitudinally extensible braided sheath woven from nylon and cellulose fibers which is impregnated with a natural or synthetic rubber elastomer.

DRIVE UNIT FOR CAP AND TUBE TYPE YARN COLLECTION ASSEMBLIES. E. K. Bauer (to Am. Viscose Corp.). USP 2 887 278, May 19, 1959. (2558)

COMBINED TWISTING AND CABLING MACHINE FOR PRODUCTION OF TIRE CORD. F. Ridgway (to Arundel, Coulthard & Co. Ltd). USP 2 887 840 and 2 887 841, May 26, 1959. (2559)

The machine consists of several units, arranged on each side of the machine, with two cabling spindles between two sets of uptwisting spindles.

SEWING THREAD. H. D. Corkum (to Am. Thread Co.). USP 2 888 365, May 26, 1959. (2560)

A thread for use in sewing machine bobbins is coated with a microcrystalline wax superimposed on a coating of a pressure-sensitive adhesive to permit greater thread compression in the bobbin case.

FABRIC PRODUCTION C

Warping, slashing, yarn preparation C1

ACRYLIC SIZES. D. J. Guest (to Imp. Chem. Inds. Ltd). BP 809 745, Mar. 4, 1959. Through BCIRA 39: 1823 (1959). (2561)

Sizes are made by polymerizing acrylic or methacrylic esters in a solution of starch or dextrin; the proportion of polysaccharide may range from 6 to 300% on the weight of ester.

TRAVERSE MECHANISM FOR CROSS-WINDING MACHINES. W. Steeger. BP 809 842, Mar. 4, 1959. Through BCIRA 39: 1822 (1959). (2562)

The cam groove is provided in a reverse worm spindle and the thread guide is pivoted to an elongated follower in such a way that this rotates through a small angle at each reversal, so that the guide is displaced relatively to the center of the follower.

SPEED-REGULATED FILAMENT WINDING MACHINE. Hollandse Signaalapparaten NV. BP 809 866, Mar. 4, 1959. Through BCIRA 39: 1819 (1959). (2563)

The invention relates to the winding of filament packages from skeins on swifts, on a machine of the type in which the package spindles are driven by pressed contact with a motor-driven endless belt or rope.

PIRN WINDING APPARATUS. E. Negishi (Japan). BP 810 038, Mar. 11, 1959. Through BCIRA 39: 1821 (1959). (2564)

The invention combines the advantages of both individual and group drives for pirn winding spindles. Separate mechanisms, including a clutch, for actuating the thread guides are arranged to receive a drive from a common reversible shaft.

TALLOW EMULSIONS FOR ADDITION TO A WARP SIZE. E. Mercer. BP 810 383, Mar. 18, 1959. Summary in BCIRA 39: 2079 (1959). (2565)

APPARATUS FOR SIMULTANEOUSLY WINDING A PLURALITY OF THREADS ON A SINGLE BOBBIN. W. Lenk (to Barmer Maschinenfabrik AG). USP 2 882 674, Apr. 21, 1959. (2566)

Two or more threads are wound simultaneously on a single bobbin uniformly and without snarling by periodically twisting the threads in opposite directions during winding.

BOBBIN WINDING MACHINES. Algemene Kunstzijde Unie NV. BP 810 325, Mar. 11, 1959. Through BCIRA 39: 1820 (1959). (2567)

The yarn guides for the vertical spindles of a multi-spindle bobbin winder are pivoted to a common rail mounted for vertical reciprocation behind the spindles. Each guide arm may be clipped, when in its raised position, at right angles to the rail so that free access to the spindle is possible while the rail continues to move up and down.

CLIPS FOR WARPING CREELS. C. C. Bodel (to Linen Ind. Research Assoc.). BP 811 069, Mar. 25, 1959. Summary in BCIRA 39: 2078 (1959). (2568)

WARP GUIDE FOR SIZING. P. Gummi (to Am. Enka Corp.). USP 2 886 879, May 19, 1959. (2569)

The guide is in the form of a helical spring which accommodates a yarn in each coil and can be rotated about its axis through a 360° angle.

WINDING MACHINE TRAVERSE MOTION REVERSING MECHANISM. E. K. Bauer (to Am. Viscose Corp.). USP 2 886 974, May 19, 1959. (2570)

Snap action device for quickly reversing the direction of travel of a traverse mechanism moving at high speed.

WINDING APPARATUS. W. Bakker (to Am. Enka Corp.). USP 2 887 279, May 19, 1959. (2571)

The spool holder is supported from its periphery, rather than its axis, in order to maintain perfect alignment between the spool surface and the driving drum.

SLASHER DRYING ROLL HEATING AND COOLING MEANS. J. Cocker, III (to Cocker Mach. & Foundry Co.). USP 2 887 786, May 26, 1959. (2572)

SPINDLE DRIVE FOR COP WINDING MACHINES. J. Cocker, III (to Cocker Mach. & Foundry Co.). USP 2 887 842, May 26, 1959. (2573)

The spindles are driven by separate electric motors rather than from a single powered shaft.

YARN TENSION DEVICE. W. B. Simons, Jr., and E. M. Seagrave, Jr. (to Tube Masters, Inc.). USP 2 888 216, May 26, 1959. (2574)

A fluid-actuated tension device is controlled by means of a valve responsive to variations in tension of the traveling strand.

Weaving C2

LOOM COP CHANGING MECHANISM. P. J. Smith (to T. C. Keay Ltd). BP 810 666, Mar. 18, 1959. Through BCIRA 39: 2081 (1959). (2575)

Cop feeler for detecting when the cop has reached a predetermined state of exhaustion, and means for moving into operative position the device for extracting the remainder of the weft at the next pick.

LOOM DRIVE. Holding Luxembourgeoise Metapic SA. BP 809 959, Mar. 4, 1959. Through BCIRA 39: 1825 (1959). (2576)

To drive a loom so that the first pick is at full strength a flywheel is coupled to the shaft in such a way that it can overrun and thus give the shaft extra power at the start. The driving connection is an endless band threaded alternately between a set of pins standing out from the flywheel and another set on a disc that is fixed to the shaft; the band is of a star shape as it lies between the two sets of pins.

SEPARATING MAGNETIZABLE WARP THREAD DROP WIRES. S. S. C. Fleischer (Denmark). BP 810 908, Mar. 25, 1959. Through BCIRA 39: 2082 (1959). (2577)

A machine for separating drop wires from groups on guide rods comprises magnets that can be lowered to the wires by means of a crank or eccentric and raise them as required to fixed, stronger retaining magnets where they are held ready for threading up with the warp ends. The retaining surface of each fixed magnet is at an angle of less than 90° to the direction of movement of the movable magnets.

TEMPLE THREAD CUTTER. J. A. Cugini (to Draper Corp.). USP 2 886 070, May 12, 1959. (2578)

Pneumatic control for scissors type cutter for maintaining the blades out of shearing engagement except when the filling is to be cut.

LOOM CLUTCH. J. Picanol (Belgium). USP 2 888 044, May 26, 1959. (2579)

POSITIVE AND AUTOMATIC WARP LETOFF FOR POWER LOOMS. F. Kondo (Japan). USP 2 888 955, June 2, 1959. (2580)

The warp letoff is correlated with the cloth takeup mechanism, both being positively driven in order to give a constant speed ratio of cloth winding to warp supply. This results in a uniform warp supply and avoids breaking of warps and fabric defects.

FLEXIBLE WEFT INSERTION DRIVE FOR SHUTTLELESS LOOM. M. R. Flamand, and A. J. Tosches (to Draper Corp.). USP 2 888 956, June 2, 1959. (2581)

NARROW FABRIC LOOM SHUTTLE. L. L. Ritsky. USP 2 888 957, June 2, 1959. (2582)

Coil spring for taking up the slack in filling as it is fed from the bobbin to the outlet eye of the shuttle.

Knitting C3

SEAMLESS HOSIERY WITH RUN-RESISTING AREAS. E. P. Bellman (to Berkshire Knitting Mills). USP 2 887 860, May 26, 1959. (2583)

An additional yarn is knitted in a pattern of tuck, float, and plain stitches in a narrow area adjacent to the toe to prevent runs originating in the toe from extending into the leg of the stocking. Run-resistant areas may also be located in other portions of the stocking.

LACEMAKING MACHINE. Z. Czajkowski (to Winston Electronics Ltd). BP 809 788, Mar. 4, 1959. Through BCIRA 39: 1826 (1959). (2584)

The punches for perforating the jacquard belt for a lace machine are individually operated by solenoids controlled by keyboard-operated switches.

YARN FEED MECHANISM FOR CIRCULAR HOSIERY MACHINES. K. Polách (to Zapadomoravske Strojirny). USP 2 885 874, May 12, 1959. (2585)

Interchangeable yarn feed mechanism for manufacture of coursewise or horizontally striped hose.

YARN CONTROL DEVICE FOR CIRCULAR HOSIERY MACHINES. C. F. Brown and I. H. C. Green (to Hemphill Co.). USP 2 886 959, May 19, 1959. (2586)

Device for preventing free yarn ends trailing from one pattern area from being caught in other pattern areas.

YARN CHANGER MECHANISM FOR CIRCULAR KNITTING MACHINES. R. E. Zeruneith. USP 2 887 859, May 26, 1959. (2587)

NEEDLE SELECTING MECHANISM FOR CIRCULAR HOSIERY MACHINE. F. E. Deans, W. Widdowson, and S. R. Davis (to Bentley Eng. Co. Ltd). USP 2 888 813, June 2, 1959. (2588)

YARN SEVERING MECHANISM FOR STRAIGHT BAR KNITTING MACHINES. R. Thierfelder (to Karl Lieberknecht, Inc.). USP 2 888 814, June 2, 1959. (2589)

In a multisection machine, the yarn carriers when retracted are reciprocated through short distances to form narrow tapes on isolated groups of needles. The tapes are drawn away as the knitting progresses. The floats formed during introduction and withdrawal of the carriers between the fabric selvages and tapes are automatically severed.

EMBROIDERED WARP KNIT TRICOT FABRIC. A. Jacoby and P. Jacoby. USP 2 888 815, June 2, 1959. (2590)

Method of knitting embroidered tricots in a single operation on a standard single needle bar, multiple guide bar, bearded needle warp knitting machine.

Fabrics C4

TUFTED CARPET PILE HEIGHT CONTROL APPARATUS. R. E. Oberholtzer (to James Lees & Sons Co.). USP 2 884 881, May 5, 1959. (2591)

The pile yarn is fed to the loop forming mechanism at variable rates of speed to produce a pile surface of varying height.

UNIDIRECTIONAL WOVEN GLASS FABRIC FOR REINFORCING PLASTICS. J. P. Manning and W. L. Coleman. USP 2 887 132, May 19, 1959. (2592)

The warp yarns are locked in place by widely spaced, fine weft fibers.

CORDUROY FABRICS. G. Latham (to New Victoria Cotton Spinning & Mfg. Co. Ltd). BP 810 507, Mar. 18, 1959. Through BCIRA 39: 2083 (1959). (2593)

Method of interweaving certain pile weft picks with picks of the backing fabric, so that the pile does not become loose in wear when the corduroy fabric is made into garments. Each rib has a minimum of five warp ends, and each alternately woven and floated weft pile pick passes from the face to the back (or vice versa) a minimum of six times in each pattern repeat.

PAPERMAKERS DRYER FELTS. T. Hindle, E. Race, and S. Lord (to Scapa Dryers Ltd). BP 810 603, Mar. 18, 1959. Through BCIRA 39: 2084 (1959). (2594)

The claims relate to the use of Terylene and nylon in proportions between 25 and 75% of either for making papermakers' drying felts. Some of the synthetic fiber may be replaced by the conventional cotton and/or asbestos.

FABRIC FOR PAPERMAKING MACHINE FORMING SCREENS. R. Oberdorfer and H. Oberdorfer (Germany). BP 810 622, Mar. 18, 1959. Through BCIRA 39: 2125 (1959). (2595)

Fabric for the forming screens is distorted warpways during passage from one winding roller to another, so that it presents a wave form, and in this state it is held and set.

POLYVINYL POLYMER CONVEYOR BELTING. W. G. Hallam and G. H. Gostick (to Greengate & Irwell Rubber Co. Ltd). BP 810 841, Mar. 25, 1959. Through BCIRA 39: 2124 (1959). (2596)

A composition for making into or coating belting that does not develop static charges and is also fire resistant comprises a plasticized vinyl chloride polymer or copolymer, a butadiene/acrylonitrile copolymer, and an electrically-conductive carbon black.

LONG WEARING PAPERMAKERS' FELT. T. Hindle and E. H. Hall. USP 2 882 933, Apr. 21, 1959. (2597)

Both warp and weft consist of cotton core yarns helically wound with synthetic fiber yarns.

PILE FABRIC. C. Fujii (Japan). USP 2 887 131, May 19, 1959. (2598)

The fabrics woven as described can have pile texture on one side and satin weave on the other or they can have patterns with intermittent pile and satin weave portions on the same side.

RESURFACING FIBER REINFORCED LAMINATES. P. E. Oberdorfer, Jr. (to E. I. du Pont de Nemours & Co.). USP 2 887 366, May 19, 1959. (2599)

A smooth surface is obtained by abrading the laminate to raise a fuzz of fibers and wiping the surface with a liquid in which the fibers are soluble and the reinforced resin is insoluble.

LOCK KNOT FOR NETTING. R. Johnson (to Dominion Textile Co. Ltd). USP 2 888 854, June 2, 1959. (2600)

TUFTING MACHINE. W. Felton (England). USP 2 887 966, May 26, 1959. (2601)

Apparatus for securing tufts in a backing fabric without having the yarn extending from one tuft to another.

HEADING TAPE FOR DRAW CURTAINS. J. R. Lilley (to Narrow Fabrics (Lilleys) Ltd). USP 2 888 958, June 2, 1959. (2602)

FINISHING AND CHEMICAL PROCESSING D

Chemical processes D1

ORGANOHYDROGENOSILOXANE EMULSIONS FOR WATERPROOFING FABRICS. Midland Silicones Ltd. BP 809 766, Mar. 4, 1959. Through BCIRA 39: 1869 (1959). (2603)

Emulsions containing organopolysiloxanes and zirconium and zinc acetates can be applied to textiles (cured) at about 95° C to render them water-repellent.

RESIN CURING ON MOVING MATERIAL. W. W. Spooner (to Spooner Dryer & Eng. Co. Ltd). BP 809 821, Mar. 4, 1959. Through BCIRA 39: 1870 (1959). (2604)

The material is conveyed through two chambers heated to the required temperature (say 300° F). In the first, hot air is directed from jets at the material, and in the second the hot air is slowly circulated.

WATERPROOFING TEXTILE MATERIALS. W. S. Meals, J. G. Evans, and G. Landells (to Bradford Dyers' Assoc. Ltd). BP 809 822, Mar. 4, 1959. Through BCIRA 39: 1868 (1959). (2605)

The agent comprises a hydrolyzable organosilane or the product of hydrolysis thereof and an alkanolamine ester of titanic acid.

PLASTIC COATED WOVEN AND KNITTED FABRICS. M. Arnett (to Brit. Tire & Rubber Co. Ltd). BP 809 922, Mar. 4, 1959. Through BCIRA 39: 1866 (1959). (2606)

To facilitate the application of a plastic composition (e.g. polyvinyl chloride) to a woven or knitted fabric some (e.g. the warp) or all of the yarns are coated and/or impregnated with a plasticizer (e.g. tritolyl phosphate) while on the loom or knitting frame. The subsequent coating may also be applied before taking the fabric off the machine.

DRESSING MANMADE FILAMENTS AND FIBERS TO GIVE A SOFT FEEL. Spinnfaser AG. BP 810 040, Mar. 11, 1959. Through BCIRA 39: 1796 (1959). (2607)

Yarns, filaments, or fleeces of staple fiber are dressed with softeners in two stages. In the first the agent is an oil-in-water emulsion containing 0.1-0.2 g/l of oil, and in the second stage, effected after removing excess water by squeezing or centrifuging, the agent is a more concentrated oil-in-water emulsion, 70-200 g/l.

METALIZING SYNTHETIC FIBERS. Deutsche Gold und Silber Scheideanstalt. BP 809 958, Mar. 4, 1959. Through BCIRA 39: 1867 (1959). (2608)

The fibers, yarns, or fabrics are coated with metal by vapor deposition in a vacuum. Before or after metalization, the material is treated with an organo-silicon compound and/or a di-isocyanate to make the fibers resistant to swelling and/or water-repellent.

CONTINUOUS ROPE AND OPEN WIDTH WASHING MACHINES. P. Kleinewefers (Germany). BP 810 049, Mar. 11, 1959. Through BCIRA 39: 1862 (1959). (2609)

To economize in water, machines for washing fabric in rope form or open width are made up of a series of J-boxes separated by mangles. At the entry a folding unit folds the fabric into zig-zag form, and before the last box there is a pH detector that actuates a regulator for the water supply. The water and fabric flow in opposite directions. Running at 200 m/min the fabric takes at least 5 min to pass through the complete machine.

SEQUESTRATION OF FERRIC ION IN CAUSTIC ALKALI SOLUTION. R. L. Smith and P. Womersley (to Norman Evans & Rais Ltd). BP 810 113, Mar. 11, 1959. Through BCIRA 39: 1863 (1959). (2610)

The agent is both an aminocarboxylic acid and an aminoethanol, e.g. hydroxyethyl-ethylenediaminetriacetic acid.

ANTISTATIC AGENT FOR UNDYED FIBERS, YARNS, OR FABRICS. Badische Anilin und Soda Fabrik AG. BP 810 352, Mar. 11, 1959. Through BCIRA 39: 1797 (1959). (2611)

The agent is a quaternary ammonium compound of a polymer prepared from a vinyl compound of an N-heterocyclic compound, e.g. N-vinylimidazole.

INCREASING THE FLUFFINESS OF LAND FOWL FEATHERS. V. Z. Pasternak and R. M. Lollar (to U.S. Secy. Army). USP 2 886 399 and 2 886 400, May 12, 1959. (2612)

Land fowl feathers with increased fluffiness and filling power are produced by treatment in a bath of an aldehyde or glucose in the presence of a catalyst.

SHRINKPROOFING WOOL WITH POLYEPOXIDES AND AMMONIA. T. J. Coe (to U.S. Secy. Agri.). USP 2 886 402, May 12, 1959. (2613)

Shrinkproof wool with unimpaired color and hand is obtained by exposing polyepoxide impregnated wool to ammonia in the vapor phase to cure and insolubilize the polyepoxide on the fibers.

SHRINK AND CREASE RESISTANT CELLULOSE TEXTILES. C. W. Schroeder (to Shell Develop. Co.). USP 2 886 473, May 12, 1959. (2614)

Shrink and crease resistant cellulose fabrics with unimpaired strength are prepared by treatment with an aqueous medium containing a polyether polyepoxide, rubber latex, and an epoxy curing agent followed by heating to effect cure.

APPARATUS FOR THE LIQUID TREATMENT OF CONTINUOUS FILAMENTS. W. N. Sellers (to Am. Cyanamid Co.). USP 2 886 403, May 12, 1959. (2615)

The apparatus is particularly suitable for washing a gelled tow of polyacrylonitrile filaments.

METAL COATING GLASS FIBERS. J. K. Park and A. Marzocchi (to Owens-Corning Fiberglas Corp.). USP 2 886 470, May 12, 1959. (2616)

Finely divided metal is applied to glass fibers in the form of an aqueous emulsion.

SHRINK AND CREASE RESISTANT CELLULOSE TEXTILES. F. E. Condo and C. W. Schroeder (to Shell Develop. Co.). USP 2 886 472, May 12, 1959. (2617)

Shrink and crease resistant cellulose fabrics that have no chlorine retention are prepared by treatment with an aqueous medium containing a polyepoxide and an epoxy curing agent followed by heating to effect cure.

FLAMEPROOFING AGENTS. L. H. Chance, G. L. Drake, Jr., and W. A. Reeves (to U.S. Secy. Agri.). USP 2 886 538 and 2 886 539, May 12, 1959. (2618)

Phosphorus-containing aziridinyl-alcohol and aziridine-methylolphosphorus polymers are claimed.

APPARATUS FOR HIGH SPEED LIQUID TREATMENT OF A VISCOSE RAYON WARP. K.-J. Schulze (to Am. Enka Corp.). USP 2 886 878, May 19, 1959. (2619)

APPARATUS FOR THE AUTOMATIC REGULATION OF THE CONTINUOUS APPLICATION OF SPECIFIED AMOUNTS OF SOLIDS OR LIQUIDS TO A MOVING SHEET OF MATERIAL. E. H. Jones (to Brit. Cotton Ind. Research Assoc.). USP 2 887 087, May 19, 1959. (2620)

APPARATUS FOR GASEOUS METAL PLATING OF FIBERS, FILAMENTS, FABRICS, TAPES, ETC. H. R. Nack (to Commonwealth Eng. Co.). USP 2 887 088, May 19, 1959. (2621)

NYLON FINISHING TO INCREASE STIFFNESS. W. J. Van Loo, Jr. (to Am. Cyanamid Co.). USP 2 887 408, May 19, 1959. (2622)

A stiff, springy hand is imparted to nylon without an increase in flammability by impregnation with the formaldehyde reaction product of certain thio compounds.

CREASEPROOFING CELLULOSE FABRICS. W. J. Van Loo, Jr. USP 2 887 409, May 19, 1959. (2623)

Wrinkle resistant fabrics which do not discolor on chlorine bleaching are obtained by treatment with guanamine formaldehyde reaction products.

GASEOUS METAL PLATING OF GLASS FIBERS. F. E. Drummond (to Commonwealth Eng. Co.). USP 2 888 375, May 26, 1959. (2624)

PREVENTING YELLOWING OF WOOL. J. E. Moore and H. P. Lundgren (to U.S. Secy. Agri.). USP 2 888 315, May 26, 1959. (2625)

The tendency of wool to yellow on aging, due to the effects of light, is reduced by chemically modifying the wool with certain benzophenone derivatives containing hydroxy and methoxy groups, e.g. 2-hydroxy-4-methoxybenzophenone.

TREATMENT OF VISCOSE RAYON FIBERS TO REDUCE WATER UPTAKE. C. B. Ratcliffe and H. F. Wise (to Courtaulds Inc.). USP 2 888 369, May 26, 1959. (2626)

The water uptake of viscose rayon is reduced by impregnation with a heat-hardenable resinous precondensate and a water-soluble ketone.

CREASEPROOFING AND SHRINKPROOFING AGENT FOR CELLULOSE MATERIALS. A. F. D'Adamo, Jr., and W. J. Van Loo, Jr. (to Am. Cyanamid Co.). USP 2 889 192, June 2, 1959. (2627)

Cellulose fabrics resistant to creasing, shrinking, and chlorine discoloration are obtained by treatment with diesters of oxymethylene glycols.

TEXTILE FLAMEPROOFING AGENT. W. A. Reeves, L. H. Chance, and G. L. Drake, Jr. (to U.S. Secy. Agri.). USP 2 889 289, June 2, 1959. (2628)

Phosphorus-containing aziridinyl-amine polymers are claimed.

Dyeing and printing D2

FIXING PIGMENTS ON FIBROUS MATERIALS OR FOILS. H. Haakh and A. Rückert (to Farbwerke Hoechst AG). BP 810 548, Mar. 18, 1959. Through BCIRA 39: 2123 (1959). (2629)

The fixative comprises an alkali-soluble resinous condensate containing free carboxylic acid groups (obtained by the interaction of a polyhydric alcohol with a polycarboxylic acid) and a polyfunctional compound containing ethyleneimine or alkylene oxide radicals.

EFFECTING CIRCUMFERENTIAL REGISTRATION ADJUSTMENTS OF PRINTING MACHINE CYLINDERS. P. Kleinewefers (Germany). BP 810 563, Mar. 18, 1959. Through BCIRA 39: 2122 (1959). (2630)

The invention relates to a modification of the registering device covered by BP 684 277 in which idler wheels on an idler shaft between the wheel that effects register and the corresponding wheel on the main driving shaft are adjusted by sun and planet gearing. It is now proposed to keep wheels of the adjusting gear in constant engagement with the idler wheels and to use a clutch of the Hirth type to couple them together for registration.

GAS FADING INHIBITOR FOR DYED CELLULOSE ACETATE FABRICS. N. A. Matlin and L. S. Luskin (to Rohm & Haas Co.). USP 2 888 314, May 26, 1959. (2631)

Cellulose acetate fabric is treated to inhibit gas fading with from 1 to 3% by weight of t-octylaminopropionitrile.

Mechanical processes D3

COMPRESSIVE SHRINKING MACHINE. G. A. Schreiner (to Cluett, Peabody & Co.). USP 2 885 763, May 12, 1959. (2632)

APPARATUS FOR GRADUAL AND PROGRESSIVE DECATING. G. Sperotto (Italy). USP 2 885 875, May 12, 1959. (2633)

TESTING AND MEASUREMENT E

Fibers E1

APPARATUS FOR TESTING FIBER FINENESS BY MEASURING THE RESISTANCE TO FLUID FLOW. K. L. Hertel (to Univ. of Tenn. Research Corp.). USP 2 888 823, June 2, 1959. (2634)

Yarns E2

APPARATUS FOR TENSION MEASUREMENT AND/OR CONTROL OF RUNNING ROVINGS, YARNS, ETC. W. Fleck and J. A. Matthew (to Linen Ind. Research Assoc.). BP 810 482, Mar. 18, 1959. Summary in BCIRA 39: 2166 (1959). (2635)

KNOT SLIPPAGE TESTER. C. A. Zarroli (to Am. Viscose Corp.). USP 2 881 615, Apr. 14, 1959. (2636)

APPARATUS FOR DETERMINING UNIFORMITY. P. R. Ewald (to Univ. of Tenn. Research Corp.). USP 2 886 714, May 12, 1959. (2637)

Electronic circuits utilizing beta radiations are used for determining the variance or standard deviation of weight per unit length of yarns, rovings, and sliver.

DEVICE FOR MEASURING THE TITRE OF A GROUP OF RUNNING THREADS. F. Linsert, and A. Prietzschk (to Farbenfabriken Bayer AG). USP 2 889 463, June 2, 1959. (2638)

The titre is determined by measuring the mass absorption of x-ray radiation at the running threads.

Fabrics E3

MARKING DEVICE FOR FABRIC HANDLING MACHINE. Etablissements Gillet. BP 809 920, Mar. 4, 1959. Through BCIRA 39: 1871 (1959). (2639)

The invention relates to a device by means of which a cloth "looker," operating a machine for measuring and/or folding cloth, can make appropriate marks at the edge of the cloth to locate defects, without stopping the machine. The markers are supported on a ramp ahead of the inspection point and can be released individually as required by a device under the looker's control. The timing is such that the marker reaches the cloth on the arrival of the defect to be marked.